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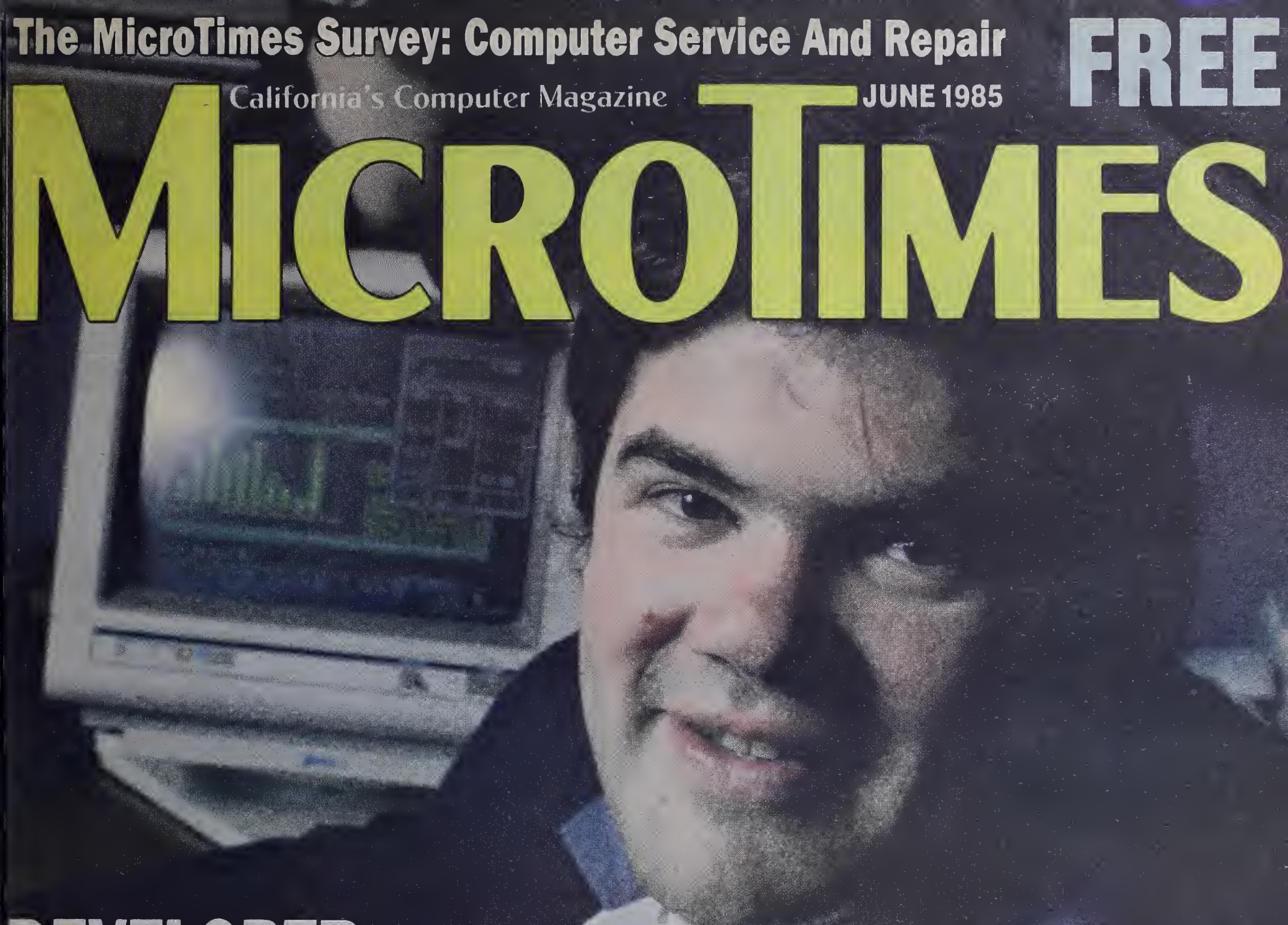

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Borland's Philippe Kahn: Software Anarchist

BRINGING UNIX TO THE MACINTOSH OFFICE

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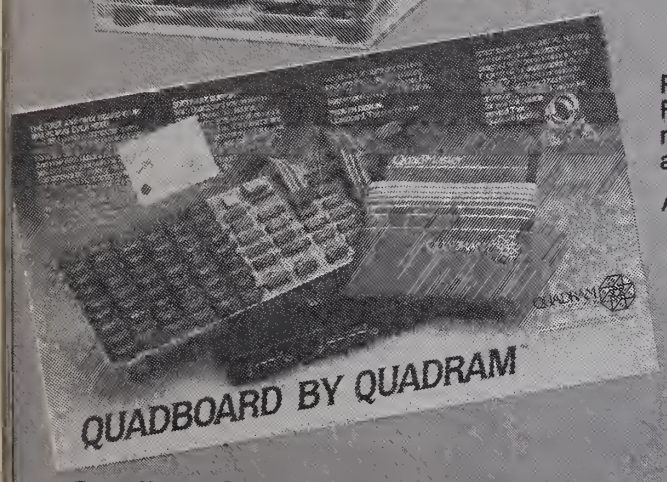

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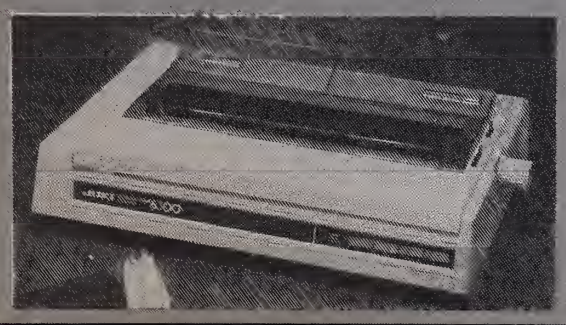

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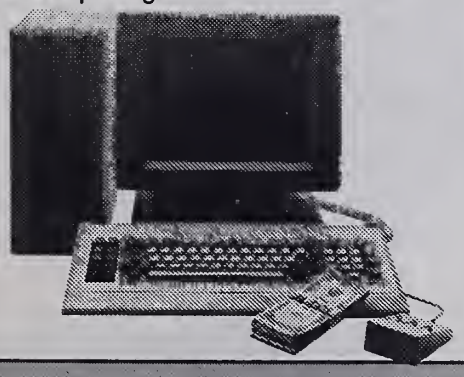

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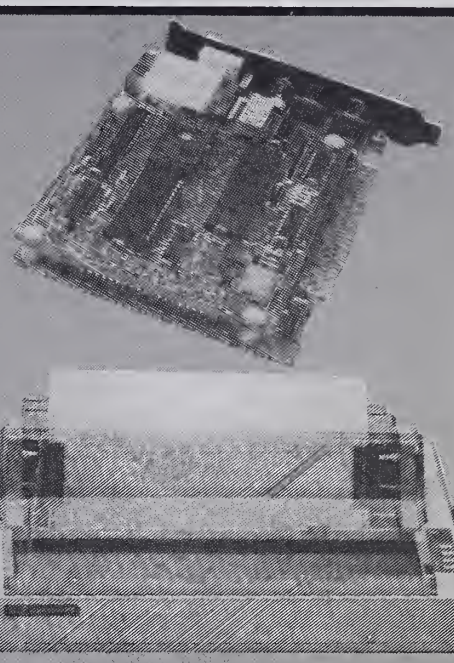

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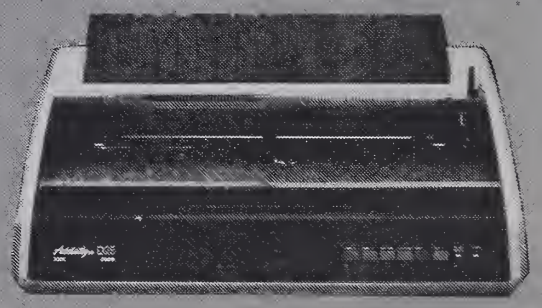

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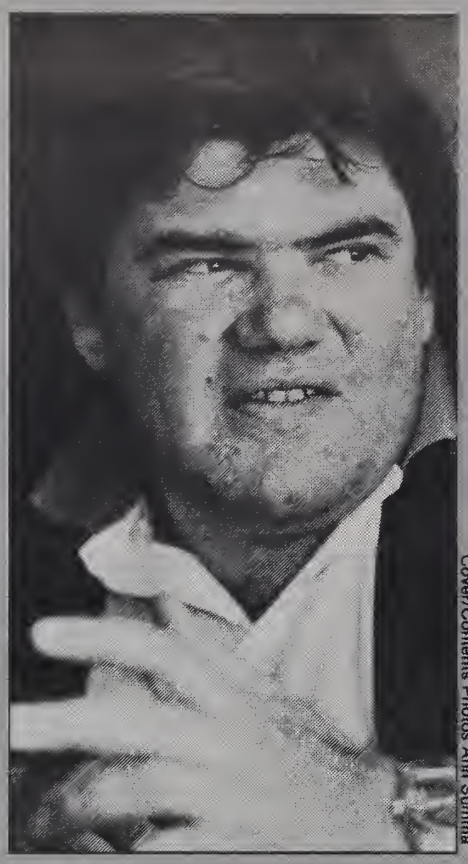

Cover/Contents Photos Ann Summa

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Surprising People And Disturbing The Establishment

By Jeff Spurrier

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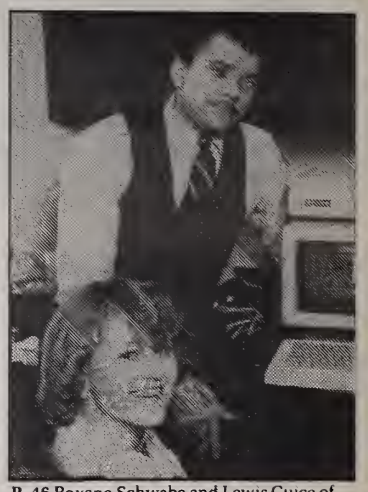

P. 46 Roxane Schwabe and Lewis Guice of The NetWorkers. Photo: Pat Johnson Studios.

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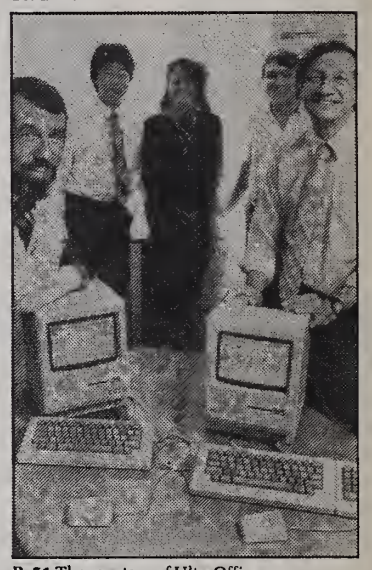

P. 51 The creators of UltraOffice. Photo: Ann Summa

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No more forms in triplicate for Southern California Edison's meter readers — now they're using handheld (and dog-proof) computers.

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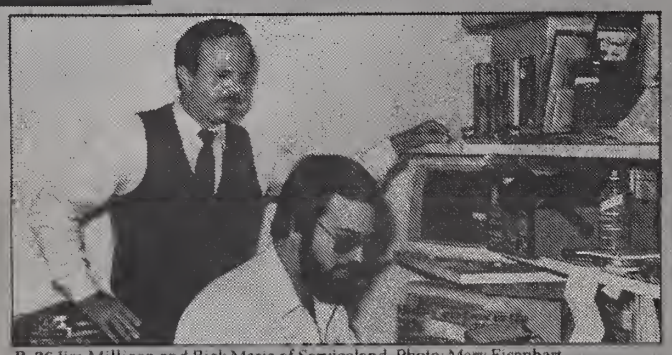

P. 26 Jim Milligan and Rick Maria of Serviceland. Photo: Mary Eisenhart

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NEWSWEEP, available from most CP/M user groups, can make your life a whole lot easier.

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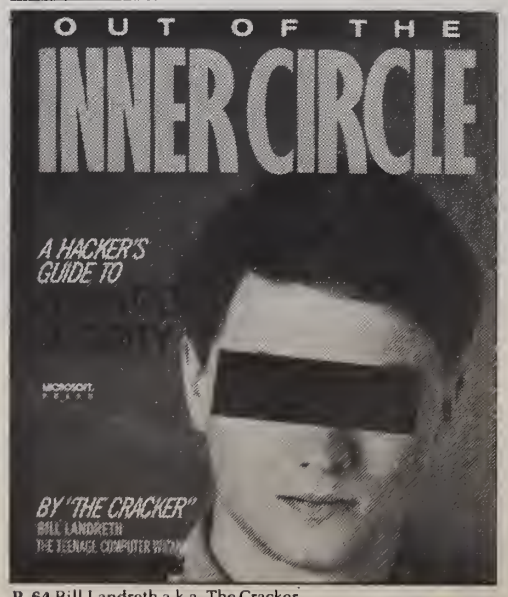

P. 64 Bill Landreth a.k.a. The Cracker

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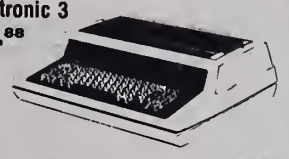

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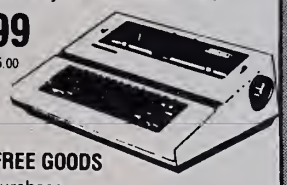
was $495.00



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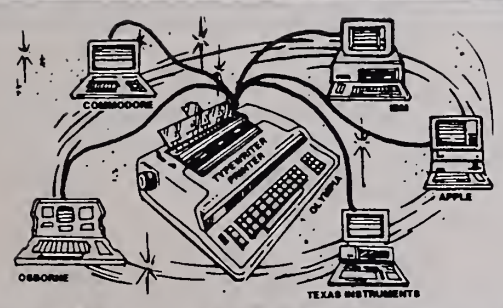
CE50	279.88
CE65 deluxe	349.88
CE70/memory	199.88
EM250	879.88



Computer Ready Typewriter/Printer with Interface

Sharp/Int	339.88	Olympia Orbit/Int	499.88
Brother 50/Int	419.88	TOWA EX77/Int	399.88
Brother 60/Int	459.88	Smith Corona	
Brother 65/Int	449.88	Typetronic 3/Int	599.88
Olivetti P-30/Int	299.88	Royal 8200/Int	469.88
SCM 300/Int	399.88	IBM Selectric II/Int	699.88
Olivetti P41/Int	379.88	Silver Reed EX44/Int	399.88
		Olympia Serial/Int	389.88

We have many others, need just the Interface? Call.

HOT PRINTERS! (DOT MATRIX)

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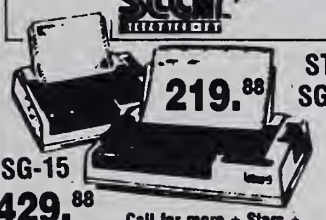
Olympia Electronic Compact N.P.
BI/DIR, 165 CPS Cent Letter Quality
2K Buffer Tractor Feed
Optional Serial
Super Quiet! Was 596
299.88



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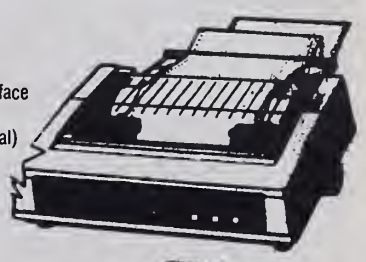
D-100 Dot Matrix Printer
- Speed: 120 characters per second
- Friction feed/tractor feed standard
- Centronics compatible paralleled interface
- Graphics capability
- Fanfold or single sheets; (roll-optional)
- Six pitches
- Prop. spacing

Reg. 349 **189.88**

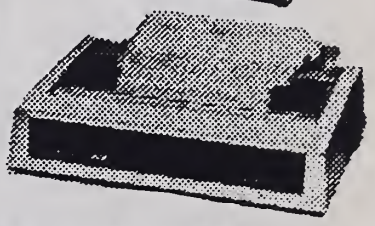


D-200 Dot Matrix Printer
Near Letter Quality
- Dual Interface
- 2K Buffer
- Plus All Features of the D-100
- Tractor Feed

Was 595 **349.88**

D-300 Dot Matrix Printer
Near Letter Quality
- 140 CPS Print Rate
- 6 Pitches
- Built-In Dual Interface
- Wide Carriage

Was 795 **469.88**



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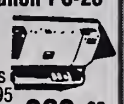
Canon PC-10
Was 999
Now 489.88

Canon PC-20

Canon PC-25



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on cartridges & accessories

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Here are a few examples:

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Olympia Deluxe	99.88
Sharp 2604	134.88
Victor A-50	199.88

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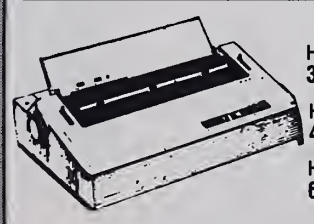

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HR 26 **499.88**
HR 35 **699.88**

OLYMPIA

Olympia 102
- Heavy duty daisywheel • 3-Pitch & proportion
- 17 CPS
- 2K & 4K
- 17" carriage
- Par & Ser interface
- Options— tractor feed & single page feed

Was 1999

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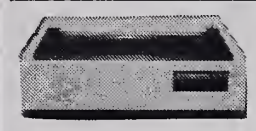

Daisywheel Deluxe
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- Daisy Wheel
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- Par. interface
- Heavy duty
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Epson FX-80	349.88	HP	All Models
Juki 6300	689.88	Toshiba	All Models
Qume	All Models		Many Others

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Top Ten IBM Business Programs

The top ten MS-DOS business programs rated on a one to ten scale:

Program	Ease of Learning	Performance	Worth the Price
Framework	7.5	9	8
Sidekick	8.5	8.5	9.9
PC Paint	9.0	9.0	8
Lotus 123	8.0	9.0	8.5
Wordperfect	8.5	8.8	8.5
Supercalc 3 Ver 2	8.0	8.5	8.5
dBaseIII	7.5	8.0	8.0
Harvard Total Project	7.5	8.0	7.5
Timeline	7.5	8.0	7.5

We rate all these programs very highly. Any rating over seven is excellent. *Framework* could be the only business program you ever buy! However, our feeling is that no program can be as good for every use as a combination of individually suited programs. For some people, *Supercalc 3 Ver 2* along with *Sidekick* might be a better combination. With *Sidekick* you can use a modem, a word processor for letter writing, and a calendar. However, if you need a dictionary, *Wordperfect* has one of the best. *Sidekick* itself has no dictionary, but will also run with *Wordperfect*. *Sidekick* should be considered as an enhancement for any of these programs. The price of the program is about the same as the cost of a calculator (which is also provided at a keystroke as a part of the package.)

Project management programs are a must in any business environment. Very often the difference between failure and success can be simply understanding the magnitude of the project. Both the listed management programs will calculate critical paths, which will help you understand which projects can be done concurrently and which are dependent on others. Any change made to dates, time, or resource results in a recalculation of the critical path.

If the above programs were the only ones offered, they would be enough to justify computerization of most offices. They will also lead to enormous productivity improvement in any conceivable environment.

Apple: Trouble In Paradise

Just as the dust seemed to be settling at Apple (and just as we were going to press, unfortunately), President and CEO John Sculley set the computer world reeling again by ousting Apple co-founder, Chairman of the Board and head of the Macintosh Division Steve Jobs from any position of real power; although Jobs retains most of his titles and remains one of Apple's chief stockholders, no personnel are directly responsible to him under the company's current configuration. Speculation is rampant as to what this all means; no statements were forthcoming from Apple by press time. More next month — stay tuned.

Apple has been sending confusing signals to all the Apple watchers. The new business line with the Macintosh XL at the vanguard was announced just a few weeks ago. Now the Macintosh XL has been cancelled.

Some of Apple's middle management has been defecting (to say nothing of Steve Wozniak). Does all this mean that Apple is in trouble? I don't think so. I think there is, simply put, too much change happening in too short a period of time for some of the Apple employees. Apple has to change its image from an entertainment company to a business company if they want to compete with IBM. That kind of a change is likely to show the symptoms mentioned above in the giant computer company. Resistance to change is generally very great.

PHOTO: CHRIS STEWART/SAN FRANCISCO CHRONICLE

Apple's Steve Jobs (foreground) and John Sculley in somewhat happier times.

Apple has taken on several larger companies in the past and come up a winner. They have continued to show creative management style and innovation, and there is more than a little evidence that the "Macintosh Environment" is the wave of the future.

I wouldn't sell any of my stock over a little change at Apple. Change is good in this industry.

US Supercomputer Goes To Japan

According to the *LA Times*, Nissan Motor announced that it will buy a supercomputer from Cray Research of Minneapolis. Hitachi, the Japanese company offering a competing computer, was beat out by Cray.

All the complaining about the Japanese government putting so much money into and controlling the direction of the computer industry bothers me considerably. The complainers about Japan and their "government intervention" seem to overlook US government intervention.

If Kennedy had not decided to go to the moon we would have waited at least 10 more years for the microprocessor that we all know and love today. If you think about it, the US government spends large amounts of money on high technology research and development, amounts unmatched by the Japanese government.

The "Star Wars" weapon development that is about to occur will probably have a bigger impact on high technology and computers than the first "Space Race." This development will be financed by the US government — $1,000,000,000,000!!! All that money to pack small, smart, and power into spaceships. Europe is scared stiff that they will be left behind in the technological leap this will cause.

The Japanese are our friends, and good friendly competition is good for this country. Look what it did for the auto industry. After the auto industry decided to stop ignoring the Japanese imports and compete with them we have seen much better cars from Detroit.

Look Out *Jazz* Here Comes *Excel*

When Lotus' *Jazz* makes its long-awaited appearance (due this month), it will be greeted by a rival — Microsoft's *Excel* for the Macintosh. Expected to sell for $395, it is likely to offer *Jazz*, which will sell for $595, some serious competition for the number one spot on the charts.

New Chapter For English Hackers

In England two computer hackers were arrested in March by Crosspool City Police from the fraud squad (I like the name). The police waited outside the house of one of the men for a signal from the British Telecom officials.

South Yorkshire police carried out a similar operation with warrants under the "Forgery and Counterfeiting Act." Two men were also arrested and taken to Central London police station; all the involved computer equipment was seized.

The most well known breakin in England was into Prince Philip's electronic mailbox.

It was said that the raids astonished the close-knit and highly "secretive society" of hackers.

MSX To Microsoft: See You In Court

MSX Corporation filed a complaint in Federal Court April 3, 1985 seeking injunctive relief and damages from Microsoft Corporation for the use of the MSX trade name. The mark has been used by MSX Corporation since 1982, according to MSX.

MSX Corporation sells and services microcomputers for large corporate customers from its offices in the San Francisco Bay area, the Los Angeles area, and Oklahoma City. Their business is marketing personal computer products to large corporations.

More Memory For Your Spreadsheets

Intel announced an expanded memory board for the popular spreadsheet programs. Lotus's new *Lotus 1-2-3 ver2* will be able to take advantage of the expanded memory. Don't worry if you want to use *Framework* or one of the other popular spreadsheet programs — most of them will also

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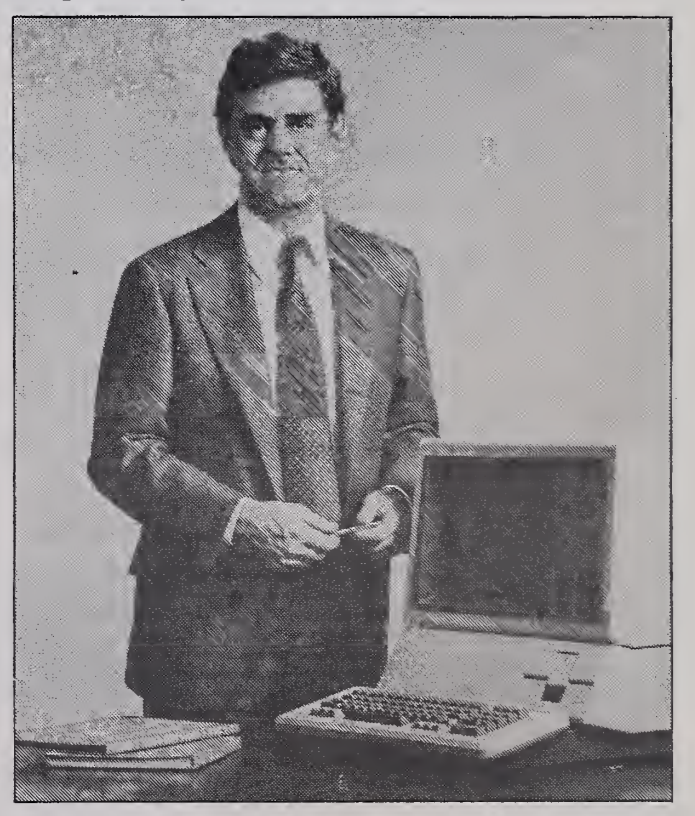
Engelhart Associates is the independent, professional source of information for Bay Area businessmen who need advice regarding the purchase of a business computer system. An objective advisor, not a self interested salesman. We are not a "computer store." We have no inventory of hardware and software that we need to sell.



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be able to take advantage of the new board. The version of *Symphony* that takes advantage of the new board should be available in July of this year. Ashton-Tate's *Framework* support will be available in the third quarter of 1985.

Lotus 1-2-3 currently uses a lot of memory by saving empty cells in a fashion which is very memory-intensive. Well, guess what! *Lotus version 2* with the new Intel board should eliminate your problem forever. Whatever amount of memory is available will be consumed (somebody's law) — it wasn't long ago that 64K was a lot of memory. Today on the current crop of computers 512Kb or 640Kb of memory can seem confining.

The new memory products are called Above Board/PC and Above Board/AT. Each board is expandable to 2M-bytes. An IBM PC or PC-XT system can be expanded up to 8M-bytes. The AT boards, at 4M-bytes each, can expand your AT up to 8M-bytes.

Of course the spreadsheets today consume most of the available memory for the average PC. With this new product, I would think one of them would offer a prize to the user who meaningfully fills the entire available memory first.

The Above Board/PC retails for $395 with 64K-bytes and $595 with 256K-bytes, Above Board/AT for $595 with 128K-bytes and $995 for 512K-bytes. For more information contact Connie Barr (503) 629-7369 at INTEL Corporation.

Infoworld Changes To Tabloid Format

Infoworld editor James E. Fawcette says the upcoming change is "in response to customer requirement for timely news coverage." I tend to think the shortage of ads in the magazine has more to do with the change than meeting the needs of the readers. Philippe Kahn appears to be buying a little better than 15% of the full page ads currently in the mag.

Eagle Computer Goes To Korea

Eagle Computers intends to begin moving its manufacturing operation to Korea. At least 80% of their operation will be moved to Asia. As in so many other aspects of the computer industry this year, price competition has become the only way to survive. Eagle thinks that the move will make them competitive enough to bring their company back to life.

If you haven't checked recently, Eagle makes some excellent machines and the price recently has been very good. Good luck to Eagle.

Correction

Last April we ran a review of *SeekEasy*, an easy-to-use data storage and retrieval system for IBM-PC and compatibles. We dutifully informed you that this sterling product is available only by mail (for $87.00 plus $3.00 shipping and handling) from its manufacturer, Correlation Systems. With characteristic brilliance, we neglected to give you their address, which is:

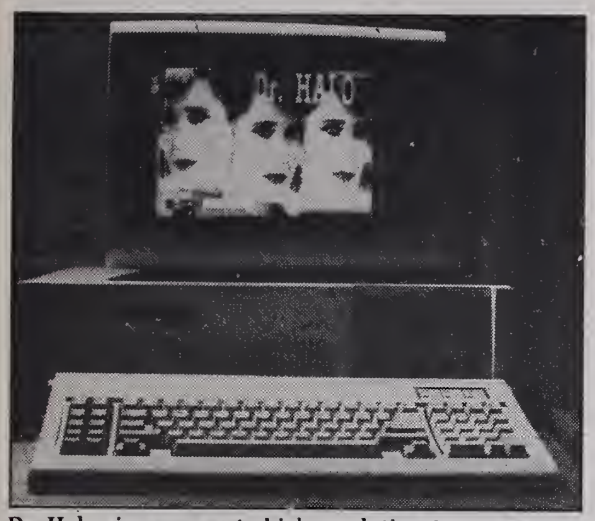
Correlation Systems
81 Rockinghorse Road
Rancho Palos Verdes, CA 90274
(213) 833-3462.

Abject apologies to those who've been inconvenienced by this oversight.

IN RECEIVING

Dr. Halo Halo gives users access to the 640X350 high resolution mode. In this mode graphics can be created in 16 simultaneous colors from a possible selection of 64 colors. IBM's enhanced graphics adapter is now supported by Halo.

Halo, which is a graphics subroutine library, forms the foundation for a number of graphics software packages for the PC market. According



Dr. Halo gives access to high-resolution 640 x 350 graphics on the IBM-PC

to Media Cybernetics, Inc. the Halo device driver for the EGA, which replaces five IBM drivers, requires less storage than any one of the individual IBM drivers. Benchmark tests indicate the Halo driver to be 230% faster than the IBM VDI driver running the same graphic function mix.

For more information contact Pava Wodiska (301) 270-0240; Media Cybernetics 7050 Carroll Avenue, Takoma Park, MD 20912.

VIC-Talker The *VIC-Talker*, from Talktronics, Inc. provides vocabulary translation of text to synthesized speech using advanced English language pronunciation rules and a user-expandable exception memory for Commodore owners.

Special modes are provided to define and select two different "voices," either one usable on a word-by-word basis. *VIC-Talker* will provide sentence-weighted intonation to provide a variable pitch voice to emphasize statements, questions and exclamations.

For more information contact Doug Triman, Talktronics, Inc., 27341 Eastridge Drive, El Toro, California 92630 or call (714) 768-4220.

The Book Of Adventure Games This book is published by Arrays, Inc. All you would-be adventure game players out there who were stopped cold for lack of the next clue can rejoice. The cheat sheet has now been published.

Book of Adventure Games has a few pages of introduction, history of adventures, what makes a good adventure, and how to tackle an adventure game. The book includes descriptions and maps to 75 of the most popular games currently available.

The first thing I did with the book was, of course, jump to one of my favorite games. Their map was accurate. My next step was to go to one of the games I never could solve. What an advantage to have a book full of clues! I don't have time to spend the required amount of time on adventure game to solve the obscure puzzles, so this book

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- ☐ dBase III 340
- ☐ dBase II 245
- ☐ Multimate 250
- ☐ Crosstalk 100
- ☐ Smartcom II 100
- ☐ Volkswriter Deluxe 160
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- ☐ Pc Mouse w/paint 130
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✪ HARDWARE

- ☐ AST 6-Pac 64K $240
- ☐ Paradise 256K Ram & Clock w/64K 190
- ☐ Hercules Mono Card 280
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✪ DISKETTES

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will allow me to review some of the games I started but gave up in frustration.

For more information on other titles from Arrays, Inc. contact Linda Feldman, 11223 South Hindry Avenue, Los Angeles, California 90045. Telephone (213) 410-9466.

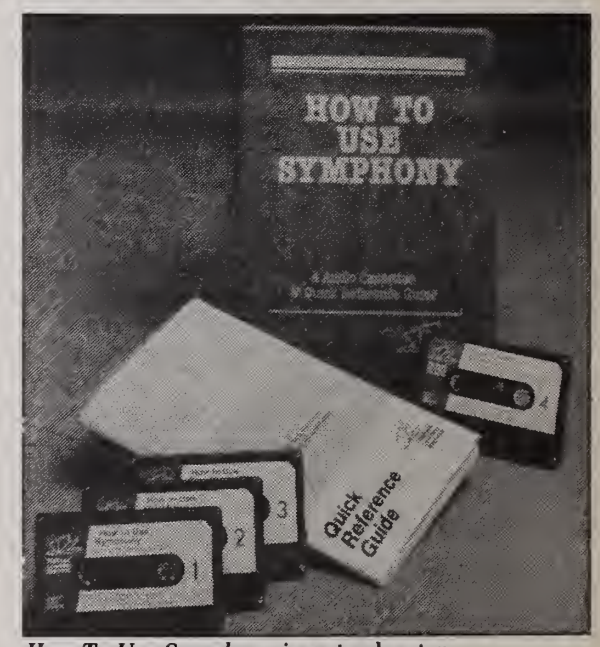
2-Meg Mac

At the Byte Computer Show in Anaheim I talked to Curt Johnson of Levco Enterprises. He was demonstrating their two-Megabyte RAM installation on a 512 Macintosh. Using a RAMDISK program he was able to load four Macintosh programs and still have room for the 800K RAMDISK. All four programs were loaded concurrently and Curt was able to switch back and forth instantly from where he was in each application when it was last accessed. No watch appeared on the screen ever during this demonstration. The cost of this gem is going to be approximately $800 if you have 512K; if not, then closer to $1000.

For more information on the two-Megabyte upgrade contact Curt Johnson at Levco Enterprises, 11568 Sorrento Valley Rd., San Diego, CA 92121 or call (619) 755-7827.

How To Use *Symphony*

FlipTrack Learning Systems is now offering an audio self-study course on *How To Use* Symphony. A step-by-step programmed learning process leads you through all of Symphony's applications, including database management, word processing, printing, graphic and telecommunications.



How To Use Symphony **is a step-by-step programmed learning system that leads you through all of *Symphony*'s applications**

FlipTrack says the training program provides shortcuts for 1-2-3 and advanced features such as macros and form generation.

For more information contact Judith A. Ressler at (312) 397-4267 or Lee McFadden (800) 222-FLIP.

New Computers From Compaq

The Portable 286 and Desktop 286 are two new computers from Compaq that are even more powerful than the IBM-AT: the Compaq 286 runs 30% faster than the AT and has 20 Megabytes of internal fixed disk drive storage. The system comes with a fixed disk back-up system that protects 10 Megabytes of information on a single, pocket-sized tape cartridge. What a portable (luggable)!

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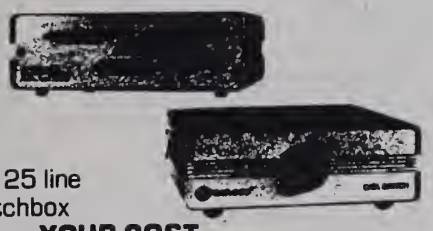
These switchboxes are used to connect more than one peripheral device to a CPU or vice versa where a 25 line (DB-25) connection is desired.



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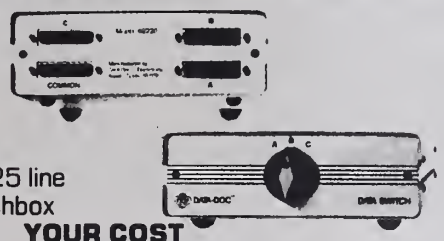
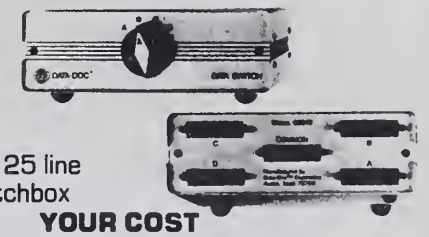
serial switchbox
LIST 109.95 **YOUR COST 79.95**



AB25-3
3 position 25 line
serial switchbox
LIST 149.95 **YOUR COST 119.95**

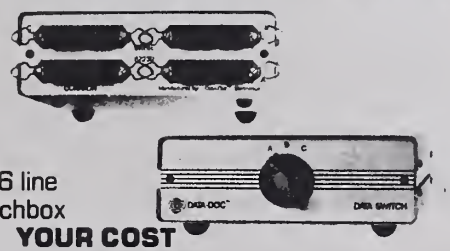


AB25-4
4 position 25 line
serial switchbox
LIST 189.95 **YOUR COST 126.95**

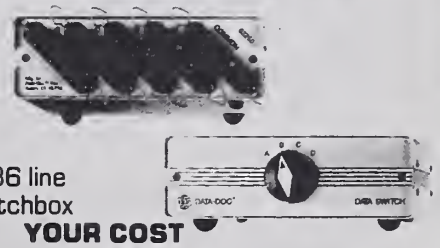
PARALLEL DATALINE SWITCHBOXES

These switchboxes are used to connect more than one peripheral device to a CPU or vice versa where a 36 line (centronics) connection is desired.

AB36-2
2 position 36 line
parallel switchbox
LIST 149.95 **YOUR COST 109.95**



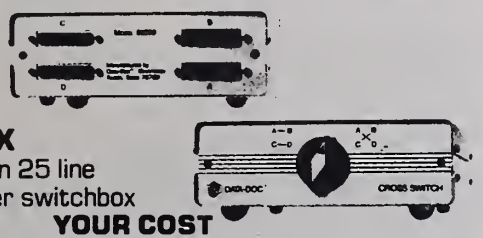
AB36-3
3 position 36 line
parallel switchbox
LIST 159.95 **YOUR COST 127.95**



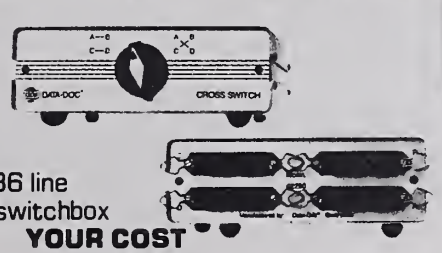
AB36-4
4 position 36 line
parallel switchbox
LIST 199.95 **YOUR COST 145.95**

CROSSOVER SWITCHBOXES

These switchboxes allow the connection of two printers or other peripherals to two CPU's and allow them to be switched.



AB25-X
2 position 25 line
crossover switchbox
LIST 174.95 **YOUR COST 139.95**



AB36-X
2 position 36 line
crossover switchbox
LIST 189.95 **YOUR COST 149.95**

RIBBON CABLE ASSEMBLIES

These ribbon cable assemblies may be used with the above switchboxes for interconnecting your devices.

RS-232 DB-25 RIBBON CABLE ASSEMBLIES

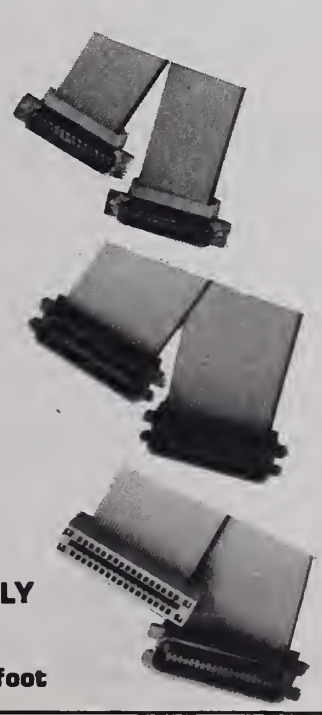
model #	description	price
25M-25M	— male to male	**10.50 + .50 per foot**
25M-25F	— male to female	**11.10 + .50 per foot**
25F-25F	— female to female	**11.30 + .50 per foot**

CENTRONICS 36 PIN RIBBON CABLE ASSEMBLIES

model #	description	price
36M-36M	— male to male	**7.00 + .72 per foot**
36M-36F	— male to female	**10.40 + .72 per foot**
36F-36F	— female to female	**15.80 + .72 per foot**

TRS-80 PARALLEL PRINTER RIBBON CABLE ASSEMBLY

model #	description	price
36M-34E	— 34 pin edge card to 36 pin male	**6.45 + .68 per foot**



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25 foot	**39.95**

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MONITOR EXTENSION CABLES

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HARD DRIVE CABLE ASSEMBLIES

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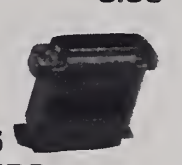
external	**14.95**

DUAL FLOPPY DRIVE CABLE ASSEMBLIES

internal	**10.95**
external	**12.95**

POWER CORDS **3.95**



RS-232 DB-25 GENDER CHANGERS

AGC-M	male	**9.95**
AGC-F	female	**9.95**

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Price: *Executive Writer* $69.95; *Paperback Writer* $39.95; *Executive Filer* $49.95; *Number Works* $39.95
Reviewed by: *Bennett Falk*

It is no great secret what "personal" computers are doing in the business world. In any given month the top 25 software products will include seven or eight database management programs, five or six word processing programs, at least one spreadsheet program, at least one integrated product, a sprinkling of utilities and "user interface enhancements" and the vertical software of the season (particularly before April 15). These are the software products widely regarded as "serious software," and in keeping with this reputation, the top 25 products have serious prices, serious manuals, and most likely a serious "learning curve."

Now Paperback Software introduces four packages of serious software for the IBM PC and compatible computers that are modestly priced and easy to learn. They promise to be of considerable interest to anyone using a computer for business applications.

Paperback Software's line of business products includes a fully featured word processor (*Executive Writer*), a text data management system (*Executive Filer*), a general purpose spreadsheet program (*Number Works*), and *Paperback Writer*, a basic word processing program. When combined on a single disk, *Executive Filer* and *Executive Writer* may be used together.

These packages have several features in common. All of them have clear, easy to read manuals as well as online help that can be summoned up when needed. They all have good screen management and are "fast" programs, and all of them have a similar feel. This has added benefits for users working with more than one of these packages: what you know about one product will be of help in getting around with the others. In addition, telephone support is available from Paperback Software for all the products.

Executive Writer, destined to be the flagship of this product line, has already been reviewed here (May 1985). It is a very good, fast word processing program.

Executive Filer is no ordinary database product. It is most readily used to manage text, but, in fact, anything that can be put in a file on your computer and displayed on the screen (think of spreadsheets or graphic plots) can be managed by *Executive Filer*. *Filer*'s bias toward "text data management" makes it a promising product for an audience that has been largely ignored by the relational database software of this world: anyone who works with contracts, legal documents, or citations of any kind will find this to be a very helpful tool. In addition, it would serve software developers very well as a basic "source code control" system.

Filer uses concepts already familiar to anyone who has worked in an office: file cabinets, file drawers and note cards provide a simple hierarchy in which to organize things. As in the material office, you must first "unlock" a file cabinet to get at its contents. Once it's unlocked, you may work with any of the cards in that cabinet's file drawers.

The procedure of adding new cards requires only that you choose the "Make Card" selection from the Cardfile Menu. *Executive Filer* will start an editor to allow you to enter the text of the card. If the material you want to file is already on-line, you can insert an operating system file in your file card very easily. Each card you add to a file may be a maximum of 8000 characters (about 1500 words, or five double spaced pages). You may even include special print effects (boldface, underlining, etc.). When the card is edited to your satisfaction, you exit from the editor, saving your work.

As you exit, you will be prompted for the name of a drawer in which the new card is to be stored and for a list of keywords which will be used for retrieval of the file card. A maximum of ten key words may be assigned to any card.

The manual assignment of keywords is a mixed blessing. On one hand, the keyword you assign to a card need not occur in that card. This is convenient if the card's contents are not text, but graphics instructions or spreadsheets. For text retrieval, however, it would be handy if queries could use in-context words you've already entered: entering key words manually leaves you dependent on remembering just what key words are relevant, as well as what key words you have used on other cards with similar topics.

Retrieving cards is easy: choose the "Fetch Card" menu selection and enter a keyword. Any cards you have flagged with that key word will be queued up for display. When scrolling through cards you will see only the first screenful of each card's text, which is a minor inconvenience. To see the entire card, you must select "Edit Card". To its credit, the editor starts instantaneously, but some means of paging through each card without having to start the editor would be helpful.

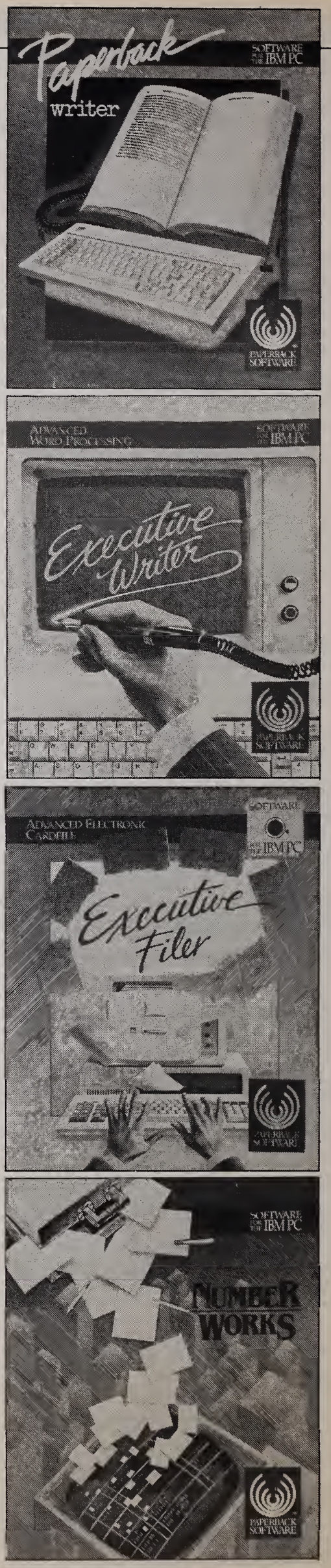
When querying for cards you will have Boolean operators (AND, OR, NOT) available to build more complex queries.

Executive Filer works very well on its own, but it can also be integrated with *Executive Writer* to provide a very fine writing environment. When used in combination, these two products offer a full-featured "MailPrint" program that allows you to print customized copies of the same document with free variable substitution anywhere in the text. This feature is most commonly used for mailing list management, but you will find that it is suitable for other things as well.

When *Filer* and *Writer* are combined, you can toggle back and forth between the two programs with one command. More to the point, you can move data with ease from document to note card and from note card to document. This will be a godsend to anyone who has "boiler plate" documents to assemble or bibliographic references to be inserted into a document.

Less flashy but no less usable is the *Number Works* spreadsheet package. *Number Works* is disk based: the only limitation on the size of a *Number Works* spreadsheet is the amount of available disk space. Beyond this, *Number Works* includes a timer that automatically saves spreadsheets on disk during a work session. This is a great boon. Everyone knows the value of periodically writing work to disk, but in practice it's difficult to remember to do this.

Spreadsheet features are fairly stable these days. *Number Works* has the ability to show up to eight windows on your spreadsheet. There are forty built-in functions that can be included in formulas. Recalculation may be done either by row or by column. Missing from this package are the ability to "name" cells (a feature which vastly improves the "readability" of formulas), and the



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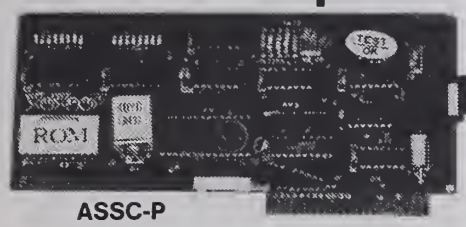

ASSC-P

Key:
a = Apple II or II+
b = Apple *IIe*

16K RAM Card (Language Card)

The ARC-16K RAM Card allows the Apple* II and II+ computers to expand from 48K to 64K. Complete with instructions. Key: (a)

ARC-16K. $39.95

Z-80 CP/M Card

The AZ80-1 is Soft-card compatible. Used with CP/M related programs. Key: (a,b)

AZ80-1. . . . . $49.95

EPROM Burner Card

The AEB-2 allows user to program and work with standard EPROMs (2716, 2732 & 2764). Easy to use, on-board firmware. Menu contains the following options: Write, Read, Copy, Compare, Blank-Check and Monitor. Complete with instructions. Key: (a,b)

AEB-2. . . . . $69.95

80-Column Card w/Soft Switch

The A80-C is an 80-column card designed for the Apple* II and II+ computers. The card is equipped with a soft switch which allows easy hookup for any monitor. The A80-C also features inverse video capabilities. This card is similar to the Videx*** 80 column card. Complete with instructions. Key: (a)

A80-C. $74.95

Super Serial Card

The ASSC-P is a serial card with a printer mode. It generates standard RS-232C signals and is similar to the Apple* Super Serial Card. Complete with instructions. Key: (a,b)

ASSC-P. $99.95

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- Uses Chinon Pinch-type mechanics • 163K unformatted • 35 tracks • Super quiet • Works with Apple Controllers or other compatibles (ACC-1) above • Complete with connector — just plug into your controller • Size: 5¾"W x 1⅝"H x 8"D • Wt.: 4 lbs.

ADD-12. . . . $159.95

APPLE™ *IIc* Compatible 5¼" Half-Ht. Disk Drive

- Same specs as ADD-12 (above) except no controller necessary.

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KB-A68	68-Key Apple Keyboard only.	$ 79.95
EAEC-1	Expanded Apple Enclosure Case only.	$ 59.95

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The JE614 is a newly introduced numeric/auxiliary keypad for the APPLE *IIe.** It offers the flexibility of a 10-key pad and the convenience of 23 directly accessible functions. Screen manipulating functions make word processing a snap and cursor controls make the keypad ideal for VisiCalc** users. The JE614 Keypad is housed in a durable metal enclosure and is color-coordinated with your APPLE *IIe* computer. Operation of the keypad can begin within minutes from unpacking. Special functions include: Home, Clear, Clear to End of Screen, Scroll-Up, Scroll-Down, Tab, Delete, Left, Right, Up and Down. Each key has auto-repeat. Size: 5⅞" L x 4-3/16" W x 1¼" to 2½" Slope.

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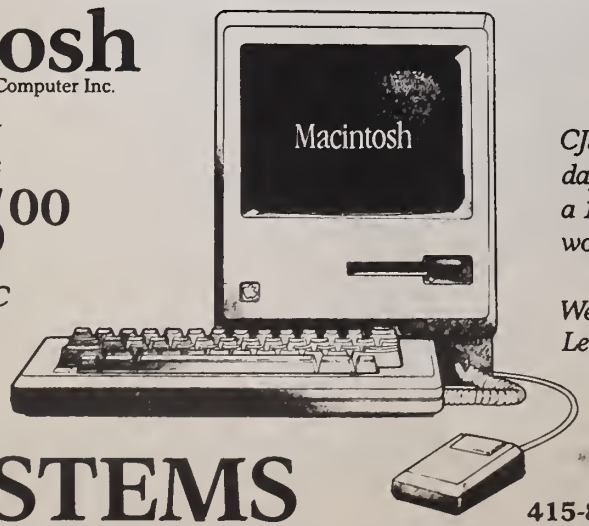

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ability to recalculate only a limited area of the spreadsheet. *Number Works* will probably not set the world on fire, but it will do the basic calculating work that most of us are engaged in.

Paperback Writer is the baby of the family. It is a subset of the *Executive Writer* package, with less flexible cursor movement commands and a somewhat different approach to printing. For users who need an inexpensive text editor, it is excellent, but it's hard to imagine that *Executive Writer* will not be a much more attractive product.

The Paperback Software business products are durable office automation tools. Each has been carefully chosen to do a specific job well and economically. The "paperback office" poses an interesting challenge: does software have to be expensive to be taken seriously? Watch the top 25 in the coming months to find out.

Starbridge DOS

Published by: *Starbridge Technologies Corporation*
For: *IBM PC, XT, PCjr, AT; 64K required, 128K recommended*
Reviewed by: *Doug Pencille*

The package cover asks: "Do you feel all alone out there when it's time to run DOS on your PC?" By its very nature, *Starbridge DOS* does take a lot of the guess work out of running DOS because of its menu-driven format. The function keys allow a single key access to the more common DOS applications such as file directory, copy files, rename files, erase files, copy and format disk. Other keypad entries list files to printer or screen, exit to DOS or to an extremely limited HELP screen.

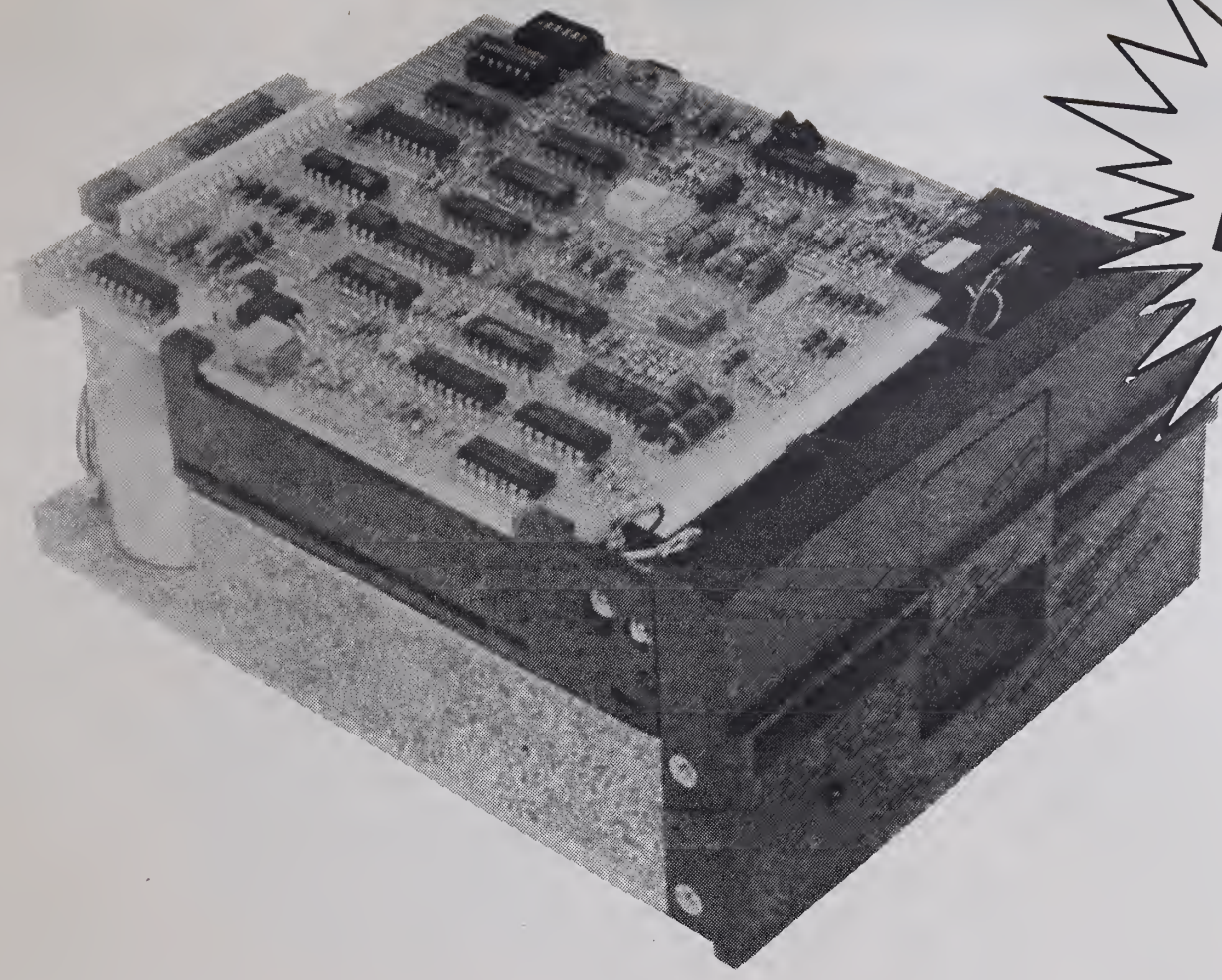
The utilities section of *Starbridge DOS* allows the user to change time and date, set up user menus for direct access to commonly used programs, set up and display user directories, and access the 24 hour/7 day Starbridge Hotline via a communications link. The screen has a section which constantly shows disk drive status, remaining bytes or disk space and a system memory display showing total bytes of memory and free bytes. The lower portion of the screen is used to prompt the user through the setup and access procedures. Hard disk users will find this program more useful than floppy users because of its ability to create root directories and sub-directories for managing the volumes of files usually contained within hard drives.

The documentation package, all eight pages of it, is poorly written and leaves the user to rely on the screen prompts and hopeless HELP screens to initiate tasks. For those who have a modem, additional help is only a long-distance phone call away. With a little trial and error, most of the *Starbridge DOS* applications can be mastered, but it's hard to get very enthused about this program.

SRA Writer

Published by: *SRA Software (Science Research Associates Inc.)*
For: *IBM PC, XT, PCjr; 128K required*
Reviewed by: *Doug Pencille*

SRA Writer is a high-function word processor package for the IBM computer, and not highly recommended for the compatibles. Like most PC software, SRA Writer will operate on the compatibles; however, the documentation and printer set-up is customized to support the PC standard printer and the PCjr parallel interface only. This could cause the user to be able to key in a



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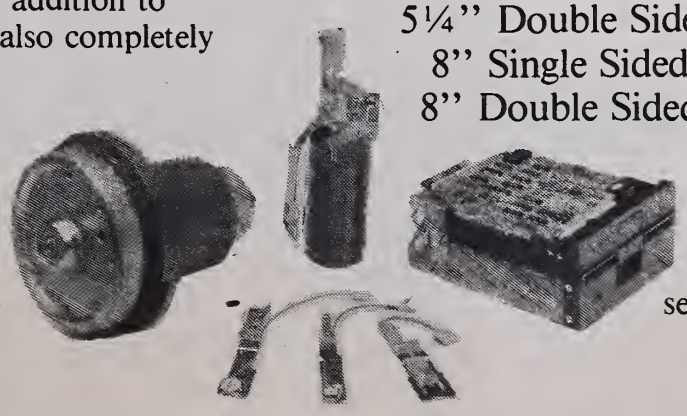

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masterpiece, only to find out that the screen is the only place to review it. By now you are probably wondering why SRA would write a package that properly supports only IBM products. This is simply because SRA is a subsidiary of IBM.

The package itself is a smooth operating and well documented word processor. There are no unique functions or keys to remember, and there are no cumbersome stick-on key tabs or overlays to clutter the keyboard. All functions and HELP screens are addressed through a menu at the bottom of the screen. My tour through the various functions proved to be simple and easy to accomplish.

The HELP and error message details are presented in a logical sequence and allow the user to return to the work without the loss of data or reposition of page. The system supports the major word processing requirements such as centering, bold type, underlining, margin and tab set, find and replace (letter, word or phrase), and a full feature cursor movement. Most functions of the package are semi-menu driven. For example, when saving a document, a menu appears, offering options of "save and return to text," "save and erase from memory," and "display disk directory."

During the test run all functions and error handling seemed to work just fine until it came time to save the document. SRA met its downfall here. The system does not account for two drive systems in either a set-up procedure or default drive routine. If, at the time the document name is to be specified, a drive is not called, out the program defaults to drive A. This could crash the main program if the user fails to write protect the boot disk and the document name conflicts with one contained within the main program. If the boot disk is write protected, an error message is displayed; however, there is no way to escape from the procedure. The user must swap disks to drive A and continue on.

Other minor quirks of the package are the autoboot, which allows the bypass of the time and date entry, but also causes files to be saved with no time and date extensions for reference. There is no error handling to protect you from naming a file with the same name as an existing file, thus destroying the previously entered data. The print screen key is disabled and the user must then select one of the print options in order to print the current page for editing purposes.

Still, despite these flaws, SRA Writer is still a good working package and deserves a fairly high rating in the word processing software category.

Intuit

Published by: *Noumenon Corp.*
For: *IBM-PC, XT, and compatibles with 256K*
Suggested Retail: *$89.95*
Reviewed by: *Doug Pencille*

Intuit arrived onto the software scene with a high price tag and found itself on the dealer's shelf as a clone of the more popular *Framework* and Lotus *Symphony* programs. Even with an extensive advertising budget, *Intuit* found itself taking a back seat to its counterparts. Noumenon then rethought the matter and re-introduced the product at the unbelievable price of $50.00. Each week the company increased the price to dealers at the rate of $20.00 until sales dropped off. After studying the supply and demand curve Noumenon plotted the price at its current $89.95. Being of a marketing background, I was really impressed by this process, and it would behoove others in the soft-

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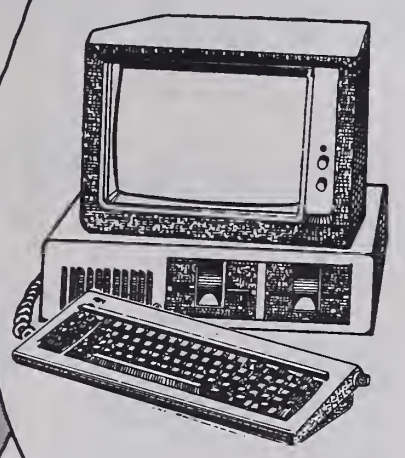

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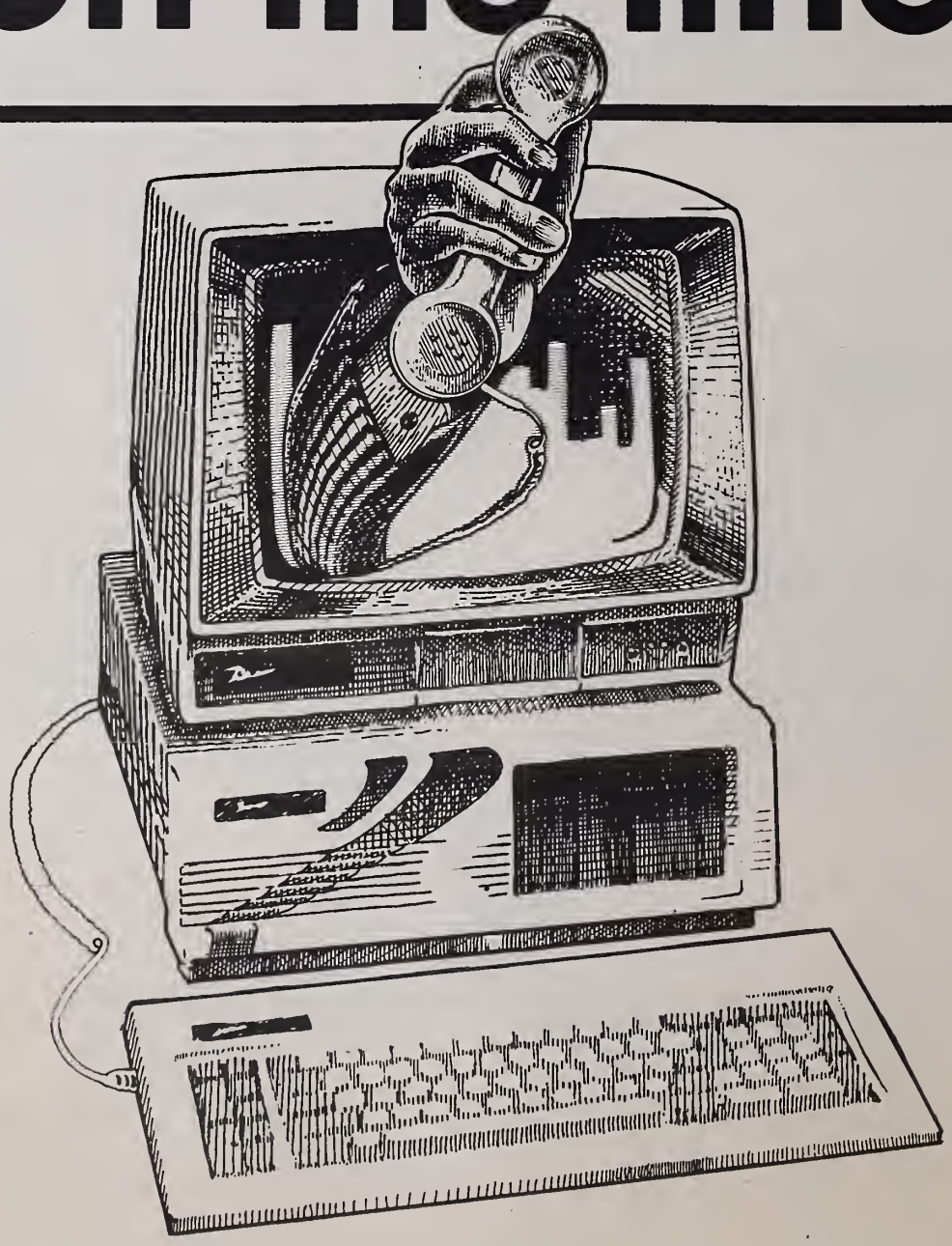

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ware market to give some serious thought to the results in planning their marketing efforts.

Intuit is an integrated software package supporting a word processor, spread sheet, on-screen calculator and a report form generator. Although not as in-depth or versatile as its competitors, *Intuit* does not burden the user with volumes of documentation or require the mass memory to be used efficiently. In fact, with 256K RAM, *Intuit* will outperform its rivals. As for expansion, *Intuit* will soon have add-on applications which include a spelling checker, graphics, communications, and writer's and statistician's kits.

After being introduced to the special characters, terminology, and 20 function key commands used by *Intuit*, the first-time user should find the documentation easy to use and can be up and running within an hour. The package comes with two disks (a boot disk and a root volume disk), less than 200 pages of reference and an illustrated user's guide to explain how *Intuit* works. On-screen help is provided by the HELP key, which will also explain user-encountered errors (those which cause that awful beep when you attempt to do something wrong).

Intuit does not use menus, windows, or mice, all of which tend to clutter the work space and screen. Instead, a meaningful disk-based file directory is used. This allows multi-level directories and direct entry into text, records, forms, and tables. The directories are not limited to DOS file names; in fact, each may be up to 67 characters in length and each directory may contain as many as 4,000 entries. This is, predictably, limited to disk space.

Word processing allows enough versatility to get most any idea from the keyboard to paper. All of the standards are included (bold face, underline, super/subscript, search, replace, insert and delete), as well as a handy user-defined word wrap point. With a little programming, the user is also able to define printer control codes which can be interpreted by keyboard commands to dress up the word processing system.

For a mere 256K RAM requirement, the *Intuit* data base and spreadsheet have exceptional capabilities. The data base accepts as many as 65 fields per record in any combination of alpha-numeric or numeric format. The only drawback of the system I encountered was the two-field sort and slow screen fill when flipping through the records. Spread sheets can be built to a maximum of a 200 × 65 matrix and are not dependent on memory. Any cell, row or column can be identified by either numeric or multi-word coordinates. User-defined macros are definable, in English, by verb usage, to perform custom calculations. In the course of using the spreadsheet I found it more than adequate and very impressive.

As a handy user tool *Intuit* has an on-screen calculator which may be called up at any time without affecting the screen text. It proves to be useful when calculating data for spread sheets and the data base. Unfortunately, the numeric key pad is disabled for the sake of the cursor control, which makes the entry of large volumes of numeric data a cumbersome task.

Customized screen and printer formatting is a simple job with the built-in report forms generator. Any portion of the spread sheet or data base can be formatted on the screen prior to printing. Also, numeric fields can be calculated within a form, and field sorts within forms are allowed.

Intuit supports most all types of printers, both serial and parallel, if the user is able to define his own printer commands. Only three printer types are pre-programmed in the system, and the user is not given much documentation support in the set-up procedure. For those who have information stored in other software program formats, *Intuit* data are transportable.

In the integrated software marketplace, *Intuit* rates right up there with its competitors; it has a few less frills, but a lot more utility.

Electra-Find

Published by: *O'Neill Software*
For: *CP/M, IBM and compatibles*
Suggested Retail: *$50.00*
Reviewed by: *Robert D. Athey, Jr.*

Electra-Find is a multipurpose searching, menu-driven program that can find a word or phrase in any set of files on a disk, and place the found material in a new file. There are CP/M and MS-DOS versions. The item can be searched in the context of line, sentence, word, or paragraph wherein the item lay. The resulting file will show the item searched for, with labels as to the line (paragraph, word, or . . .) where found, and the disk file label where found. *Electra-Find* can search any type of file for text, numbers, or strings. It is also set up to search *Wordstar* or *Perfect Writer* files.

I had a specific application for testing *Electra-Find*, using a Kaypro II (1983 version), on a scientific book chapter I wrote last year for the textile industry. I had been considering rewriting portions of the chapter for the paint industry, but looking at five *Perfect Writer* files that come out as 135 pages with 20 additional pages of footnotes/references wasn't my idea of a fun day (or week). The footnotes presented a real problem, because while writing for publication is possible on a dot matrix printer, if you use boldface type throughout the file, references and footnotes are not boldfaced. However, with *Electra-Find*, I was able to create two separate files of the footnotes which could be merged and boldfaced later.

The menu for use of *Electra-Find* is straightforward. There are help commands that can be called up at every step. The documentation is excellent, readable and understandable. You can search any disk drive or user area with *Electra-Find*. (You can search multiple disks with this program, but I did not check this out. It was easier for me to put the 40K *Electra-Find* file on several disks where it might be used to look at the text files.)

To search for references, or footnotes in my case, you respond to the "Search For" prompt by typing the word or phrase to be found. I was looking for the *Perfect Writer* command "&NOTE." Now, the choice method of isolation of the footnotes was as sentences, but specifying an unusual delimiter—the character I use to close the footnotes, the "{". The isolation wasn't perfect, but good enough to use the resulting footnote files as the basis for my revisions. I always got the "{NOTE" and most of the footnote text, but sometimes only part of the footnote. Frequently, I got the text preceding the ampersand, as well. It is possible to do several search types (isolating the word, line or paragraph, as noted earlier), one right after another, to determine which file gives you the best presentation of the information you are looking for, as the *Electra-Find* search is shown on screen in progress. After screening several styles, you can go back and pick the best one. If you use the same search output file name each time, the menu checks to see if you want the file overwritten or not.

These features allowed me to use *Perfect Writer* to edit the text file and the reference file simultaneously to place the footnote numbers only in the text file, copy and move the missing information from the text file to the reference file, and edit the reference file to take out the initially useful information that was not to be printed later, such as the source file name, and the *Perfect Writer* "&NOTE{". This was done, with some editing of text file, and reduction of the reference file, in about six hours for about 75% of the text.

As time goes on, other uses for *Electra-Find* are likely to turn up. The first big use I could think of was indexing the book chapters for the editor, so all the correct keywords would be used. The program was made to order for that application. *Electra-Find* would be worth the modest price just for the broader utility and greater number of options offered than the public domain *REFLIST* program I have seen. (Electra-Find, O'Neill Software, 440 Davis Court, Suite 1822, San Francisco, CA 94111. (415) 398-2255.)

Nutshell

Published by: *Leading Edge Software*
For: *IBM-PC, and compatible types; 256K minimum RAM*
Suggested Retail: *$150.00*
Reviewed by: *Doug Pencille*

You can't judge a software package by its cover any more. I must have passed up *Nutshell* at the software store a dozen times just because the package has no more than the name, a picture of a nut shell and a statement "ALL YE NEED TO KNOW." There is no product description, no over-stated advertising slogan or lists of features. Inside, however, is a neatly packaged documentation book broken down into three main topics. The first is the essentials, giving an explanation of Information Management Technology and basic terminology used in data base management and how they apply to the program. Equipment and installation procedures are established in a logical manner so that even a beginner can start-up error free, yet not oversimplified for the experienced user. A hands-on type instruction disk is supplied to acquaint the user with the step-by-step practices necessary to create and work with files. This section of documentation also explains the keyboard and its special keys and how to properly enter and exit the program.

The next section is a detailed reference to the screens and options of *Nutshell*. A system map is provided in a hierarchy block diagram format which can become very useful when exercising the more complicated functions of the program. Nearly all screens and options of *Nutshell* have screen messages and/or prompts to guide the user through the procedure. An extensive HELP key is provided, and error handling is usually followed by screen messages which will guide the user either through or out of the task. If this is not enough, a toll free HELP HOTLINE telephone number is provided as part of the license agreement. Each and every item in the reference section is well documented and supported by either examples or mock screen displays. A great deal of professionalism has been exhibited by Leading Edge Software in the presentation of this section of the manual.

The third section of documentation is the appendix which provides ASCII conversions to and from other files, a glossary of terms used within the documentation and finally the index. If all of

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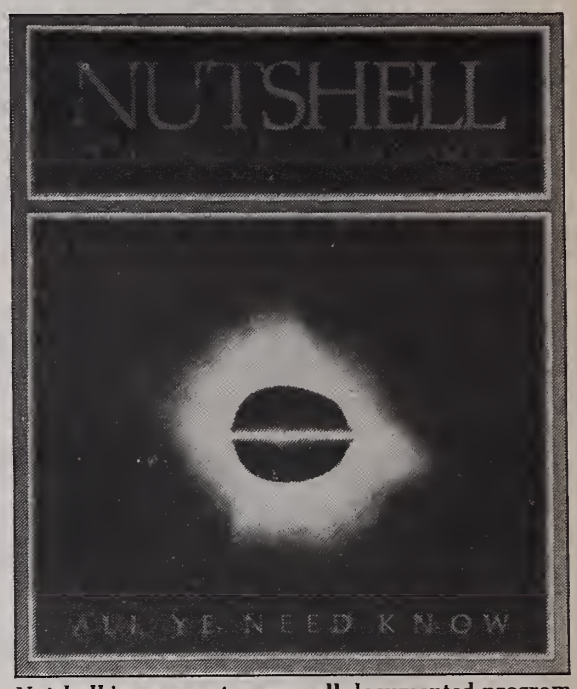

***Nutshell* is an easy-to-use, well-documented program for data base management**

this sounds like too much reading, you will be surprised to know that all of this written support is contained in only 252 pages, including the pictures.

Nutshell runs as nicely as it reads. I transported some files from another program and worked them into the *Nutshell* format. Fields and record formats can be easily manipulated to fit the screen and most any print layout desired. Information can be calculated by using previously defined formulas and field names, or a summary field can be maintained to provide a total, average, or a count of the number of records which contain a value within a specific field.

The sort and find functions of *Nutshell* are very powerful. The program maintains the records in the order they are entered. As sorts are made, either numerical or alphabetical in ascending or descending order, you can view or print them in an arrangement that is different from that of entry.

Nutshell has a layout option which enables the user to define the way in which the records are displayed on the screen and sent to the printer. Multiple layouts are allowed and saved in the file to provide a variation of output for the same set of records. Customized formats can be created using all or part of the total information contained within a record, *Nutshell* can also reshape any field, highlight it, or partition it into sections. Other options within the program allow you to create new fields, rename existing fields, delete fields, and reformulate the calculation and summary fields.

Peripheral items include the keyboard overlay, which is short and simple, with the inclusion of being able to use the NUM LOCK key to speed up the entry of numeric data. To speed the user though the screens and in and out of fields, *Nutshell* has combined the use of the CTRL and ALT keys with other special keys. Instead of, for example, returning to the menu, then selecting the find option, the user can go directly by selecting the ALT and F (Find) keys. A safety feature of autosave and a timed auto-backup are written into the program.

Nutshell was a delight to work with, from its presentation of documentation to the smooth operation of the program itself. Just look for the plain wrap cover, the software will take care of the rest.

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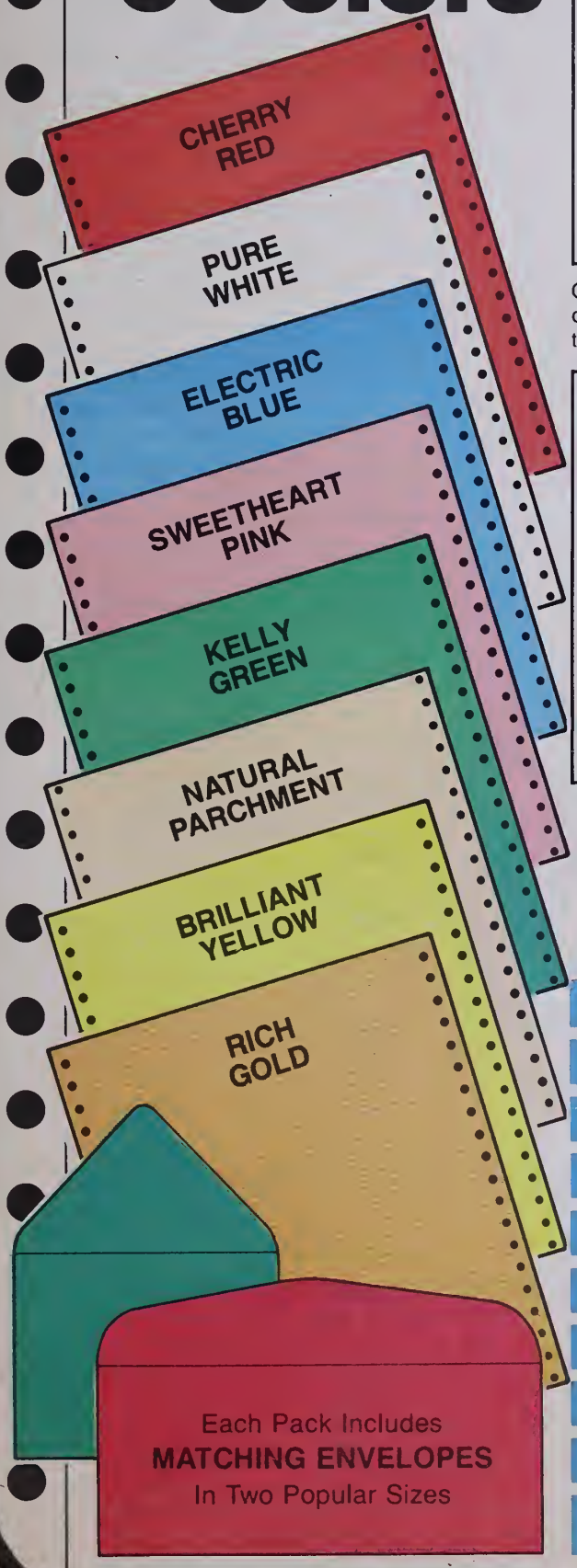

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MICROTIMES SURVEY

Service And Repair

Who You Gonna Call?

By Mary Eisenhart

Into each life some rain must fall, but lately too much has fallen on yours. You just terminated your terminal with that cup of coffee you *knew* shouldn't be on your desk. Your floppy disk drive just flopped. You're in the middle of an urgent project and your whole system just died for reasons unknown. Your 256K machine needs 1 megabyte. Your boss just fell for the blandishments of some smooth-talking devil who sold him 50 new computers for the office, without bothering to inform him that all the company's software would have to be converted to the new operating system. Now what?

As the computer plays an ever-increasing role in business, education and home management, keeping it running smoothly becomes a matter of ever-increasing importance. Consequently, a host of businesses are springing up to satisfy the needs of users with a large array of repair services, maintenance contracts, upgrades, loaners, and disk duplication. No matter how esoteric your problem, there's probably somebody out there who can deal with it; how do you go about finding them?

If your machine is still under warranty, its manufacturer has probably spelled out pretty clearly what procedures you should follow. If not, your dealer may be able to steer you to the nearest factory-authorized repair service; he may operate one himself. Word of mouth is also a good information source — check with other members of your user group for their recommendations (or dire warnings).

Although it's not always possible to anticipate every catastrophe, it's a good idea to explore your service and repair options *before* you need them; that way, you're likelier to be able to make informed and cost-effective choices.

Many dealers offer a variety of services on equipment they sell, and the people who sold you your system may be your best repair bet. Some maintain their own repair operation, others subcontract the operation to companies that specialize in particular types of computer work; in either case, the dealer's reputation is strongly linked to the quality of service you get, which is a powerful incentive to do well.

PC Land supplements its sales operation with comprehensive service and repair

Mark Bertram of PC Land, which has two branches in Southern California, admits that he's primarily in the computer sales business ("I'm the cheapest in the city," he maintains, "and I give a 30-day exchange on anything you buy from me"), but supports his retail operation with complete service and repairs performed by the G & W company; G & W can provide a 24-hour turnaround time on repairs, and will pick up the malfunctioning equipment at the customer's home or business if necessary. PC Land backs the work with a 90-day parts and labor warranty, and will provide service contracts if desired.

Other dealers and value-added resellers offer service agreements as part of their sales packages. James Cross, Chairman and CEO of Service World in San Francisco, points out that "Everything we sell to the end user comes with a one-year service contract." Other repairs are also performed and billed according to time and materials used; Service World backs these repairs with a 90 day parts-and-labor warranty. On-site computer maintenance is an integral part of Service World's operation — Cross observes with a certain pride that a survey by *PC* magazine found Service World's 1 hour average response time the quickest in the Bay Area, and notes that on-site maintenance comprises 95% of Service World's repair work.

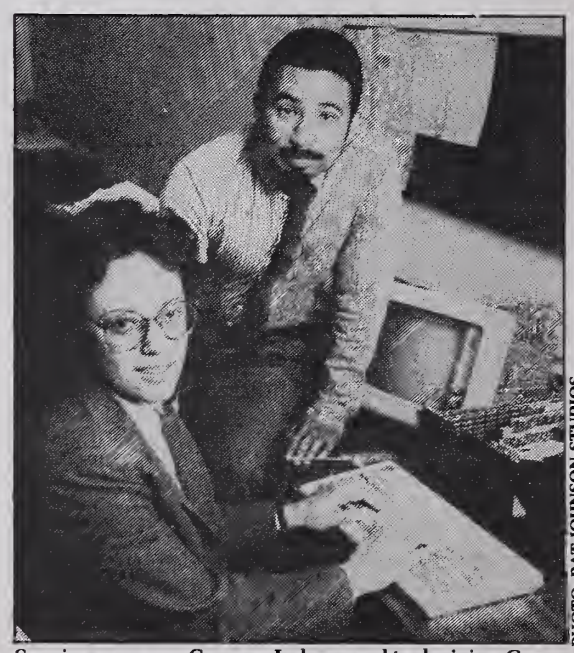

PHOTO: PAT JOHNSON STUDIOS

Service manager Carmen Lahma and technician Gus Bamberger of Service World provide skilled repair and maintenance for your PC

Consider also the fact that down time may be costing you a good deal of money, and check out not only a company's response time but its policies with regard to loaner equipment. Many, including Service World, offer loaners if the repair is likely to be time-consuming; if this is a crucial factor to you, ask.

Also, while a business's hours might not seem like a very important thing to think about, a sick computer doesn't care what time it is, and it's very helpful to know in advance who's available outside of normal business hours. Ann Chamberlain of the Electronic Depot in Fremont, which is open 10 am to 8 pm weekdays and 10 to 5 on Saturdays, says "I probably take in 50% of our repair work after 5 pm." Another potentially important factor in your decision is *where* the repairs take place; while many places offer on-site service calls, not everybody does. If carrying your ailing equipment to a service depot or shipping it off to be repaired would present serious problems, find out who makes house calls.

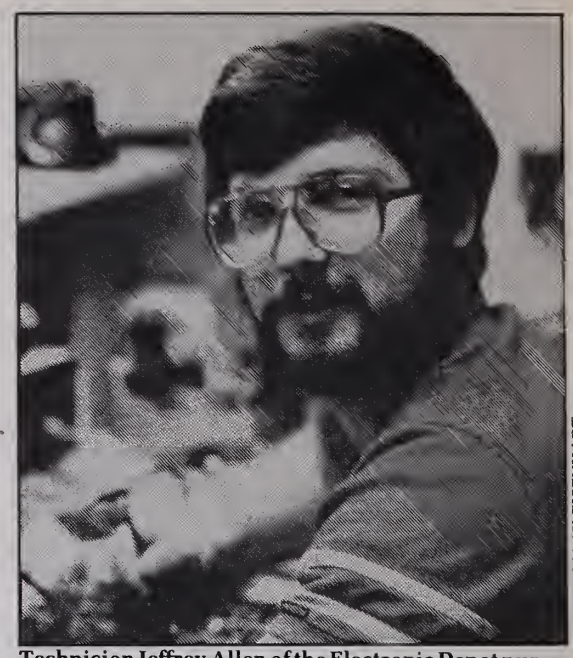

PHOTO: MARY EISENHART

Technician Jeffrey Allen of the Electronic Depot pursues an elusive short

If your computer is a popular brand like IBM or Apple, you're not likely to have much trouble finding somebody to take care of it. If, on the other hand, you have a relatively rare or orphan machine, life may be a bit more difficult. Mike Kneeland of Mission Peak Systems, which is a factory-authorized repair facility for Kaypro and IBM as well as Osbornes, notes that the temporary demise of Osborne Computer left a lot of users feeling stranded and created a support vacuum which the dealers had to fill. As a result, a national network of Osborne dealers was formed. "We support a network of 450 dealers in the country," says Kneeland. "Our main business is an exchange on parts and support. That gives an Osborne owner the ability to live in Iowa and still have an Osborne." An Osborne owner anywhere in the country can call Mission Peak for a referral to the nearest dealer. If you have a fairly unusual machine, or if its manufacturer has vanished off the face of the earth, your user group may also be a valuable source of information.

As systems become increasingly complex, it's not uncommon for users to configure their own systems, using components from a variety of manufacturers and bought from different establishments. When something goes wrong, they often find that Dealer A is willing to look at the disk drive he sold them, but won't touch the terminal bought from Dealer B or the monitor from Dealer C. As a result, service companies came into existence that do no sales at all but specialize in maintaining whatever array of components the user owns. Carl Alvarez of Computer Doctor of San Francisco says, "We are service only. We don't sell. We try to assure folks that our motive is to fix their machine." Such establishments often offer maintenance agreements that can be tailored to the individual customer's needs. Says Jim Milligan, President of Serviceland of Northern California, "Our service policy is not cast in concrete. We don't say, 'Here's the menu, take what you want.' We want to work with the individual customer to work out a program that's good for him and good for Serviceland."

In choosing your best service option, a key element is the amount of work your system is likely to need. If it's simple, lightly used and fairly

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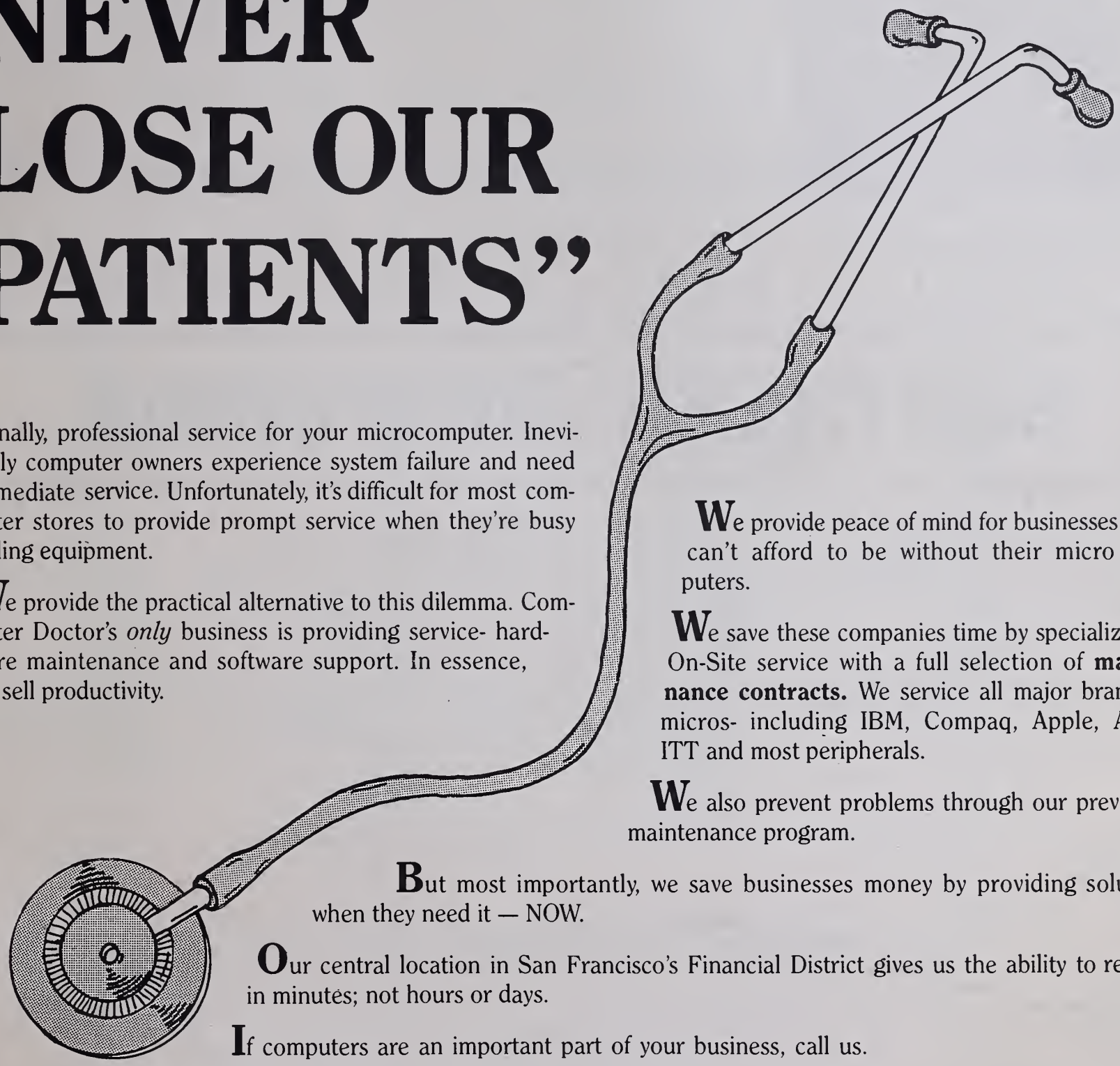

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MICROTIMES SURVEY

PHOTO: MARY EISENHART

Technician Rick Maria of Serviceland performs an intricate repair as president Jim Milligan looks on

hassle-free, your best choice may be paying for occasional maintenance and repair on an hourly-rate-plus-parts basis, which nearly everyone offers. If your system is complex, delicate, or frequently used by careless employees, you might want to consider a long-term maintenance contract.

Find out as much as possible about *how* a company does its repairs, since this will have an effect on your ultimate cost. At Serviceland, for instance, Milligan points out that a customer with a maintenance contract is primarily interested in speedy relief, so many problems are solved by a simple on-site board swap or other replacement of an ailing module. The customer who's paying for repairs on a parts-and-labor basis might find this excessively expensive if the actual problem is with a minor part, so it's more effective to diagnose and repair the specific difficulty. Ann Chamberlain of the Electronic Depot says, "We troubleshoot down to components, which is most effective for the customer. It may be more costly in labor, but in the long run it's more effective."

You'll also find businesses specializing in a particular service: disk duplication, media conversions, or VCR repair, for example. Often specialization pays off in terms of expertise. Trans Data Corp of Belmont, for instance, concentrates on servicing disk drives and related components; Al Glickman of Trans Data points out "We originated the reconditioning of disk heads nine years ago, and we're an approved vendor to most OEMs and systems houses."

Whatever your service and repair needs, a little preliminary research can save a lot of time, money and aggravation. Check around. Compare warranties. Consider special features a particular business may offer. Ask other users of your machine type who's done good work for them. The following chart may suggest some ideas.

SOUTHERN CALIFORNIA

Name Of Business	Type of Work Done	Machines Serviced	Warranty	Service Options	Comments
Computer Maintenance 8223 Remmet Canoga Park, CA 91304 (800) 848-6700	Service and repair; upgrades, board installations	Micros, minis, mainframes; factory authorized for Mannesman-Talley, C. Itoh, Data South, Liberty Electronics, Teleray, Alpha Micro, OSM	90 days parts and labor	Carry-in, mail-in, field service and free pickup and delivery in Southern California, service contracts	Services dealers nationwide; programs and discounts available to dealers
Computers and Peripheral Repair 8957 Reseda Blvd. Northridge, CA (818) 349-1033	Repairs, some upgrades, hard disk installation	Factory authorized for Epson, Juki, Panasonic, Diablo, Okidata, Comrex, Daisywriter, NEC, Molecular. Also services IBM, Franklin, Apple, TRS, Kaypro, Televideo	30 days parts and labor	Carry-in, on-site repairs from Long Beach to Ventura, service contracts	Rentals, loaner equipment in case of lengthy repairs, same-day service available for extra charge
H & W Disk Drives 1101 E. Pacific Ave. Anaheim, CA 92805 (714) 526-1992	Repair floppy disk drives	Most 5¼" and 8" models	90 days parts and labor	Carry-in, mail or UPS shipment	All personnel have long experience in disk drive field
PC Land 2400 Barrington Los Angeles, CA (213) 478-7709 1200 Pacific Coast Hwy. Hermosa Beach, CA (213) 374-1223	Sales and service; repairs, upgrades	Any	90 days parts and labor	Carry-in, service contracts	24 hour turnaround time on carry-in repairs; pickup available
Quantech Electronic Services 610 S. Harvard Blvd. Los Angeles, CA 90005 (213) 383-0941	Service on home computers, VCRs, TVs, projection TVs	Atari, Coleco, Mattel, NEC; approximately 40 makes of video equipment	30 days labor 90 days parts	Carry-in, in-home repair, service contracts	10 SoCal locations; service provider for many retailers; extended warranty plan to continue maintenance coverage after mfrs. warranty expires
Serviceland 18348 Ventura Blvd. Tarzana, CA 91316 (818) 881-1180	Service, repairs, upgrades, hard disk installation	IBM, Display writers, Compaq, Corona, most other IBM compatibles, Apple, AT&T, most printers, monitors, disk drives	30 days parts and labor	Carry-in, on-site, service contracts	Services both large corporations and home users; usually 4-hour turnaround time on repairs
Text Sciences 2716 Ocean Park Blvd. Santa Monica, CA 90405 (213) 452-9114	Media conversion, text compression	Tape to disk, disk to disk, micros, mag cards, optical scanner, 200 disk formats	100% warranty on all work	Work done on premises	Trial disk available to test converted data on customer's equipment, free with orders of 10 disks or more, $25 otherwise. Low cost duplication and conversion

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- PC8001
- PC8012

*COMMODORE
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- VIC 64
- Business Machine

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- II
- IIE
- II +

FRANKLIN
- 1200
- 1100
- 1000

XEROX
- 820
- 820-2

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PANASONIC

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*RGB

*ATARI
- 810
- 410

*NEC
- PC8031A
- PC8032A

*FRANKLIN
- Ace

*ALTOS
- 800
- 801

COMMODORE

APPLE

TANDON

SHUGART

MODEMS
*ATARI
- 835

HAYES

MONITORS
*CITOH
- Gorilla/Banana

*NEC
- JB902MA
- JB902ME
- JC1202DH
- JC1201M

Hazeltine
- 1500

USI
- 1500

TAXAN
- ATI

APPLE

PRINTERS
*CITOH
- Prowriter
- Starwriter
- Gorilla/Banana

*ATARI
- 1020 Color
- 1025
- Silent Type
- 1027

*EPSON
- F10
- RX80
- FX80
- MX100
- MX70

*OKIDATA
- Microline 80
- Microline 82/A
- Microline 83
- Microline 84/2
- Microline 92
- Microline 93

*NEC
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NORTHERN CALIFORNIA

Name Of Business	Type of Work Done	Machines Serviced	Warranty	Service Options	Comments
Apex Information Systems 2517 Van Ness Ave. San Francisco, CA 94109 (415) 885-1633	Repairs, upgrades, high speed process or upgrades, foreign power conversions custom cables, specialized configurations	IBM, Apple, all CP/M, printers, monitors, most peripherals	90 days parts and labor	Carry-in, on-site repair, service contracts	1-day turnaround time on most repairs; 4-hour response time
Communication Maintenance 1020 Serpentine Lane, #106 Pleasanton, CA 94506 (415) 462-2114	Third party computer service, consultation for end users and corporations	Minis, modular computer equipment, specialists in Diablo printers	30 days parts and labor; 90 days on products purchased from CM	Carry-in, on-site repair or pickup within 2 hours from Pleasanton; service contracts	On-site repair and pickup for Diablo products; PRIDE dealer for Diablo; free phone consultation
Computer Doctor of San Francisco 660 Sacramento St. San Francisco, CA 94111 (415) 362-8887	All types of microcomputer repairs, upgrades	Factory authorized for IBM, Eagle, Compaq and most printers; also work on Apples, Macs and most IBM compatibles	90 days parts and labor	Carry-in, on-site repair within 9 Bay Area counties, various service contract options	2- or 4-hour response time guaranteed; response time depending on contract; loaners; software support
Electronic Depot 700 Mowry Ave. Fremont, CA 94536 (415) 796-5950	Repair, service, custom system configuration, Mac and PC upgrades, disk drive alignment	IBM, Apple, NCR, ISI, Televideo, Okidata, Epson, Panasonic, Star Gemini, Olympia, Centronics; also VCRs	90 days parts and labor on all equipment except VCRs; 14 day labor and 90 days parts on VCRs	Carry-in, service contracts	Troubleshooting of individual components; store open 10 am to 8 pm weekdays, 10 – 5 Saturdays
Kelley Information Services 1325 Howard St. San Francisco, CA 94103 (415) 861-3068	Repair, upgrades, board installation, LAN and phone system installation	Factory authorized repairs for IBM, Wang, Zenith. Also service most IBM and Wang compatibles, Apple, Macintosh, printers, monitors, modems, disk drives, S-100 bus system	30 days parts and labor	Carry-in, mail-in, on-site repair from Sacramento to San Jose, service contracts	Many service options
Microcomputer Service 3849 Peralta Blvd., Suite A Fremont, CA 94530 (415) 797-4724	Repair, upgrades, conversions	Commodore, Atari, some business machines, printers, monitors	30 days labor, 90 days parts	Carry-in, on-site repair in greater Bay Area, service contracts for home and business	Specialists in home computer service, especially Atari and Commodore
Mission Peak Systems 3514 Arden Rd. Hayward, CA 94545 (415) 887-0756	Repairs, upgrades, custom-made cables	Factory authorized repairs for Osborne, Kaypro, IBM. Also service for Okidata, Juki, Televideo, Morrow, most CP/M	90 days parts and labor	Carry-in, service contracts and extended warranties available	After inspection of machine, an extended warranty can be purchased to include parts, labor and shipping costs for future repairs
San Jose Computer Repair 829 Hillsdale, #2 San Jose, CA 95136 (408) 448-6635	Repairs	IBM and Apple, specialists in disk drives	30 days parts and labor	On-site, call-in service, service and maintenance contracts	Philosophy includes informing customers of all options, including how to fix it themselves
Serviceland 1269 W. El Camino Real Sunnyvale, CA 94806 (408) SER-VICE 2340 Santa Rita Rd., Suite 2 Pleasanton, CA 94566 (415) 426-0250	Repairs and maintenance including entire systems; upgrades	IBM, Apple, Convergent Technologies, most IBM compatibles, printers, hard and floppy disk drives, monitors, standalones	30 days parts and labor	Carry-in, on-site within greater Bay Area service contracts	Repairs done at component level to save customers money; individually tailored service contracts available
Service World 55 Francisco, 2nd Floor San Francisco, CA 94133 (415) 788-6580	Repairs and maintenance, upgrades, hard disk installation on IBMs and Compaqs, transfer data, media conversions, hardware maintenance seminars for large companies	Factory authorized repairs for IBM, Compaq, Okidata, Diablo, NEC, Tallgrass, Brother, Amdek, Epson, Juki, ITT	90 days on time and materials repairs; 1-year service contract on all equipment purchased from Service World	Carry-in, on-site repairs from Salinas to Santa Rosa, service contracts	Fastest response time in Bay Area, according to *PC* magazine; loaners to service contract customers if repair is time-consuming
Techline 2124 Kittredge Berkeley, CA 94704 (415) 548-1838	Software system support, upgrades, systems administration, diagnostic work, repairs	IBM and compatibles	Manufacturer's warranty on parts; unconditional warranty on contract repairs; 120 days on non-contract	On-site, service contracts within East Bay area	Specialists in systems heavily used by inexperienced employees; next day service; experienced software technicians in all major packages
Trans DataCorp 1717 Old County Rd. Belmont, CA 94002 (415) 591-5705	Repair/recondition disk heads for 14" drives; spindles; recondition floppy disk drives; carriage and coils for CDC disk drives; fiber optic conduit assemblies	Most disk drive brands	Floppy drives, 6 months parts and labor; disk heads, spindles, fiber optics, one year	Carry-in or mail in	Originators of technology for reconditioning disk heads, approved vendor to most OEMs and systems houses

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Borland's Software Anarchist, Philippe Kahn

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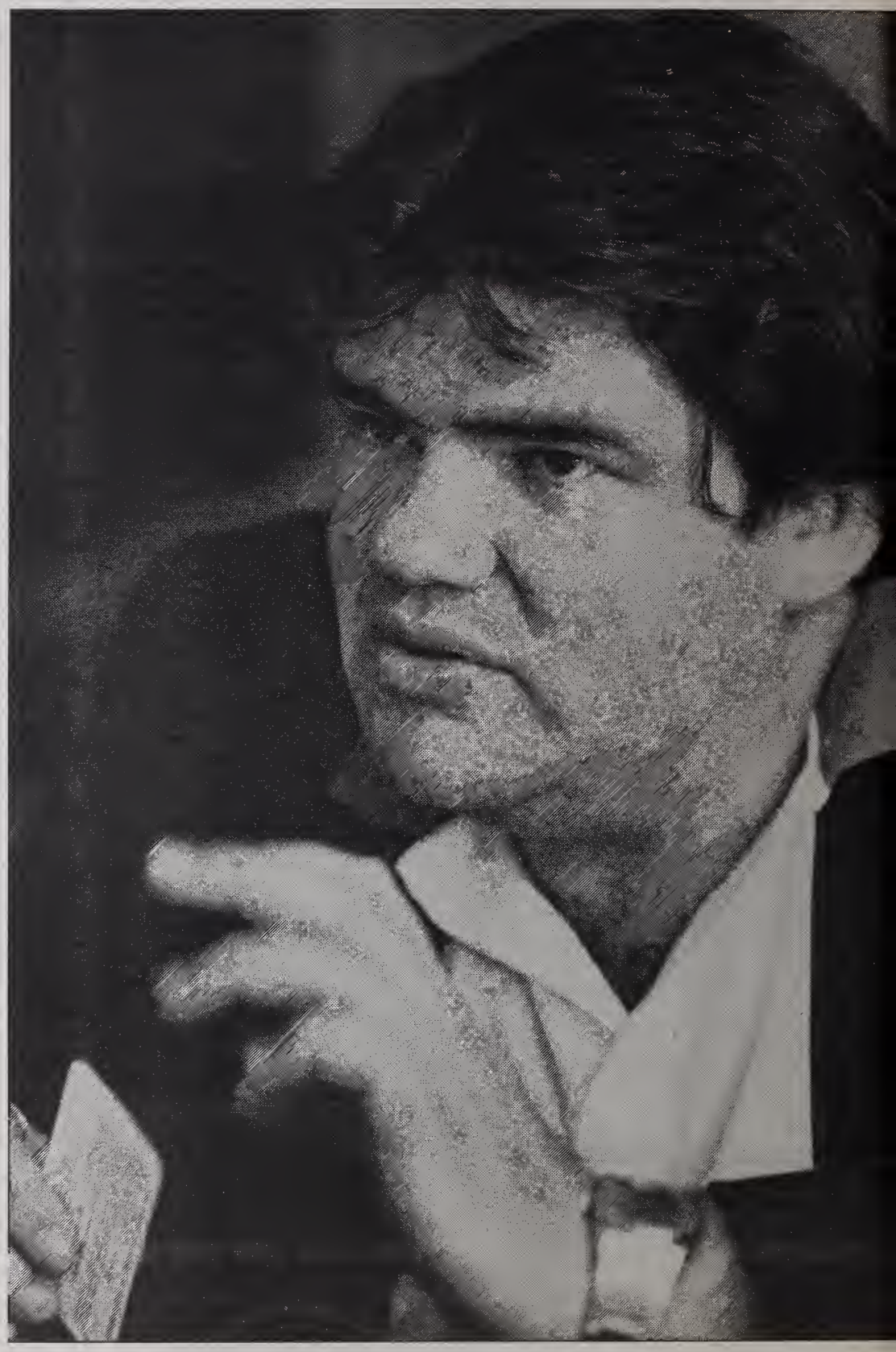


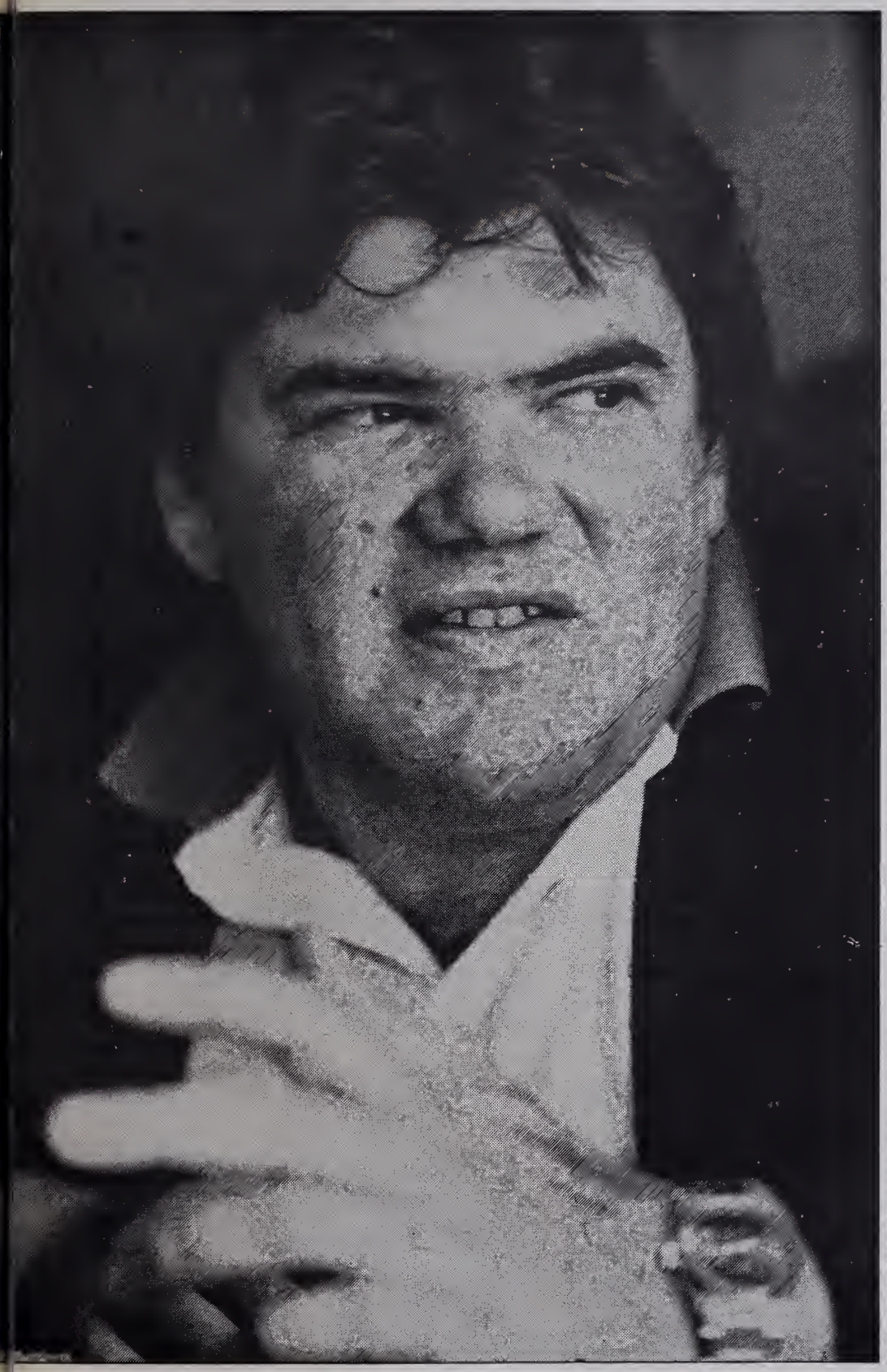
They said it couldn't be done, of course: selling top-quality innovative software for extremely low prices. Philippe Kahn, newly arrived from France and unable to find work in the industry since he didn't have a green card, didn't believe them. In 1983, he founded Borland International, which, with products like *Turbo Pascal* and *Sidekick*, has been turning the software world upside down ever since.

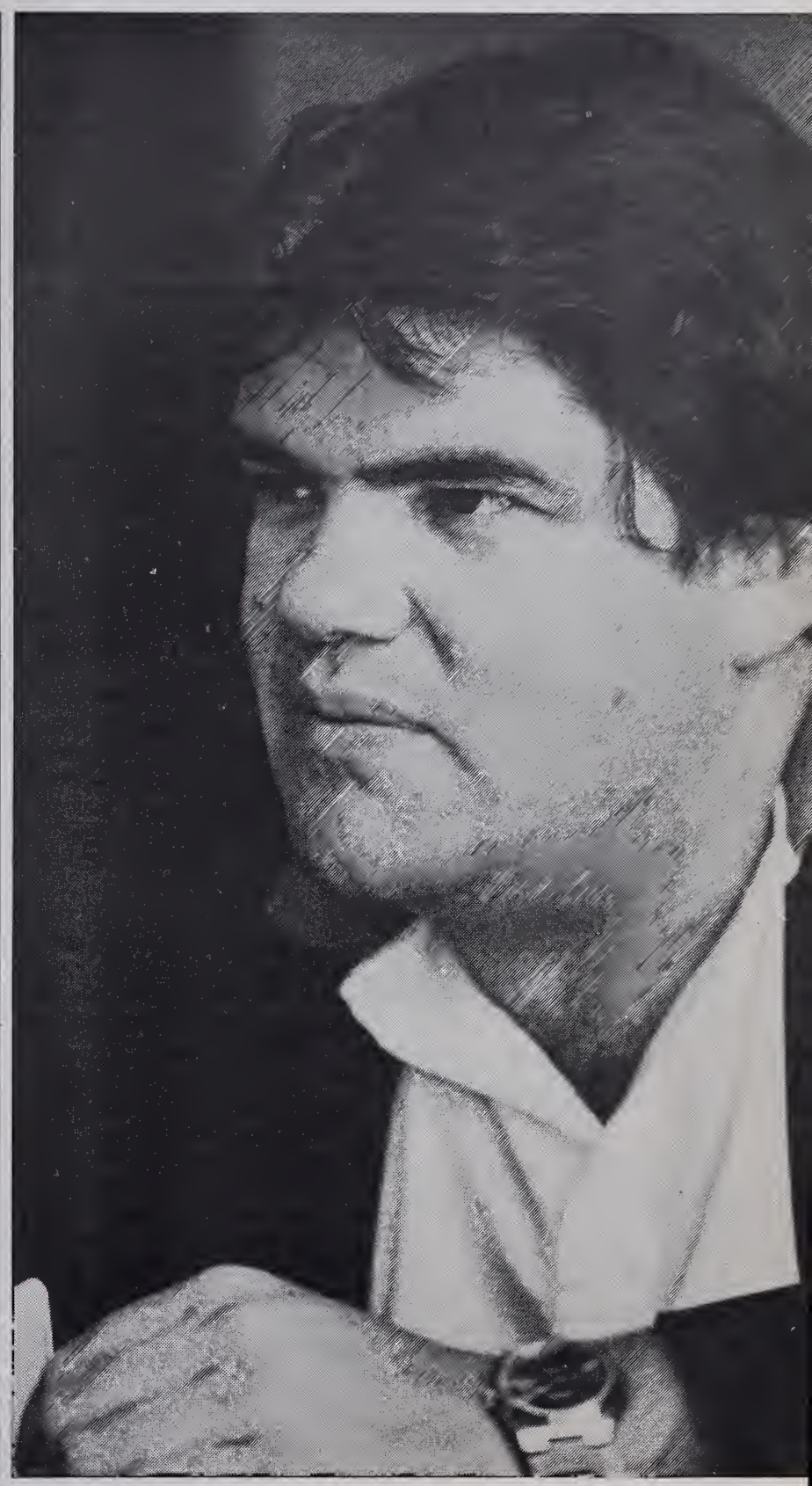
By Jeff Spurrier

The interview with Philippe Kahn, President of Borland International, took place at the company's crowded offices in Scotts Valley, near Santa Cruz. In keeping with the Borland image, most of the staffers appeared to be young, friendly, and easy-going. When Philippe Kahn arrived just before noon, he spent a half hour touring the various departments, checking up on what was going on. Most of his own programming work he does late at night at home, he later explained, since when he's at Borland the daily demands of the company require his attention. Besides

Photos by Ann Summa

"We want to do business our way," says Borland International president Philippe Kahn, "and I think our end users respect us. People in this business are too greedy to get rich. We never started this company hoping to become millionaires."





having an office at home, he also has a cellar full of electronic keyboards and computers.

***Sidekick* is one of your biggest successes; in one interview you made its development sound like almost an accident...**

Any new idea is almost an accident. If it's not, it's probably not that new. If it was possible to arrive at new ideas by logical patterns, then you'd have machines and people trying to do that all the time. It's like you're in your jacuzzi and you look at the bubbles and boom! You have an idea. Is that an accident? Of course if you sit at a conference table with ten people and say 'We're going to come up with a new product!' and six hours later you have it knocked out, I don't believe it's going to be great.

Is that what's wrong with a lot of software today?

No, I think what's wrong with software is the positions (of companies). We have something which I call the Basic Laws of Turbo Dynamics. First: high quality software; second: not copy-protected software; third: reasonable licensing agreements. All this makes what I call good software. What's wrong with most software today is they fail in terms of copy-protection. That is going to be a major issue in the next year. No matter how you look at it, copy-protection is a hassle to the user. It's a tax on honesty. It's like going to the grocery store and every time you leave the store you're searched. When you go in there they assume you're guilty. I think it's a fundamentally wrong idea. It's a wrong way to start doing business with people. So I think there's going to be a reaction in the marketplace to it.

Now as for licensing agreements, if you look at the licensing agreement on any product, you'll need three lawyers to understand what it's about. Our licensing agreement is called "Borland's No Nonsense License Statement." [He then reads verbatim the Borland licensing statement, a brief paragraph which simply states that the software is protected by U.S. copyright law and is to be treated much the same way as a copyrighted book would be. Backup copies are permitted but duplication for use by more than one user at a time is forbidden.]

That's it. Now compare it with any piece of software. [Kahn then reads a non-Borland licensing agreement.] They don't guarantee anything. It's called the "No performance warranty." Isn't this amazing? "[Manufacturer] cannot and does not warrant the performance or results that

"No matter how you look at it, copy-protection is a hassle to the user. It's a tax on honesty. It's like going to the grocery store and every time you leave the store you're searched. When you go in there they assume you're guilty. It's a fundamentally wrong idea."

may be obtained from using the program . . . The entire risk as to the results or performance of the program is assumed by you. Should the program prove defective, you and not [manufacturer] shall assume the entire costs of all necessary services and corrections." [Laughs] Do you know any industry where anyone would dare sell something like that? And the Lotus one is worse. Can you imagine an industry where it's written on the product that it's useless, it doesn't work, and you can't copy it, and by just opening the package you accept all those terms? Isn't this crazy? This is what the software industry is about these days.

How do your lawyers feel about your "No Nonsense Statement?"

We don't ask the lawyers. If you ask them then you end up with what everyone else has. That's what's crazy. We believe what protects software is copyrights, so we rely on them. Period. Just like books or music. And we contend that our software does what we say it does. The *Turbo Pascal* is a Pascal programming language and *Sidekick* is a resident index software organizer. We don't say it's nothing! You just bought nothing! Like with Lotus you just paid $495 for nothing!

At one time *Sidekick* was copy-protected. I thought...

Yes. That was because this advertising guy that worked here convinced me to copy-protect the product. And when I saw the reaction from end users I immediately released a non-copy-protected version of *Sidekick*. I also released the advertising guy. That was the first and last time Borland will copy-protect a product. That was June last year.

If you are a software publisher, and you don't use your software yourself, that means you're in trouble. It's not useful. And I would never use a copy-protected version of *Sidekick*. It's like if you're in the music business and you never listen to the songs you publish. You're in trouble. Or if you're a book publisher and you hate the books you publish. We're users. We have some 80 PCs in here and everyone uses our software.

Besides copy-protection, what do you think is wrong with most software?

Fundamentally that it doesn't work. A lot of the people who write software probably never get to use it. A group of programmers are commissioned to write something, and after they finish it they move on to the next task. If they did use it they'd find it's hard to use, not fast, took up too much memory space. People talk about user-friendly software, but the first element of user-friendly is speed.

And you think that's the primary cause of bad software—program designers who don't use their own product?

That's one reason. A lot of times the motivation for people to make software is to make money, and that doesn't make good products. It's the same with music. If you're making music just to make money, I don't think it'll be good music. It'll probably be okay, if you have talent, but it won't be good. It's the same with software. You have to like what you do, have fun at it. It has to be a creative environment in the company — which is often not the case. I don't believe having more than 10 or 15 people doing programming in one location is productive. Lotus has a hundred people in a building doing development. That kills creativity.

Why?

Too many people and too much organization. Nobody knows anybody. No one can manage that. I believe in teams of ten or fifteen who know very well what the other guys are doing and act as sounding boards and are isolated and get excited about small projects.

A lot of your catalogue is language-related programs. Why?

"A lot of times the motivation for people to make software is to make money. And that doesn't make good products. It's the same with music. If you're making music just to make money, I don't think it'll be good music."

Communications. That's how you talk to computers. We believe that's serious business. If you want to build a company that's here in the long run you don't want to be in the hits business. Lotus is in the hits business. They've got *1-2-3*, and they need another one. And because they can't find another one they have to become an obnoxious sue-people copy-protect software company to protect their revenue.

We believe the backbone of our business is programming languages

Borland International

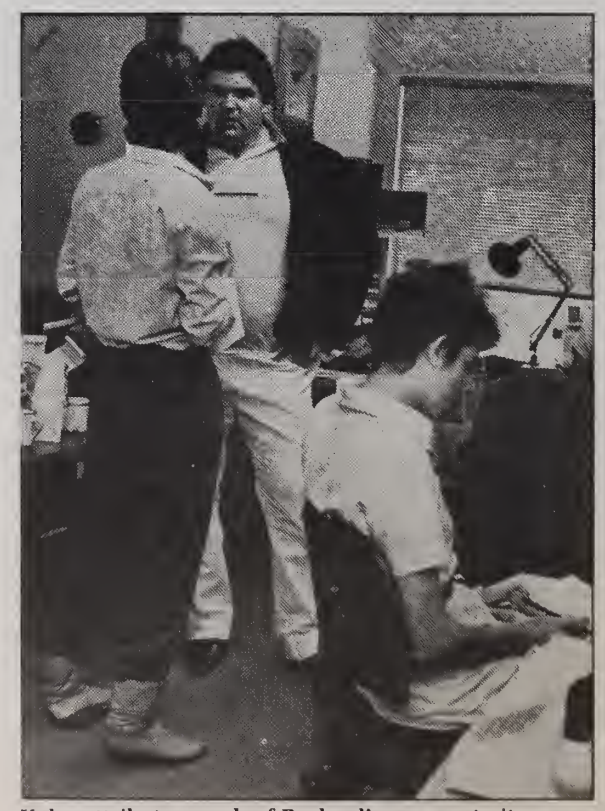
BREAKING THE RULES PAYS OFF

Ever since Borland International set up shop in late 1983, the small software house has refused to play by the rules. Besides offering drastically lower prices for top quality software, Borland went against the tide by concentrating on the less glamorous side of software—language programs, specifically Pascal-related programs.

Despite initial skepticism from industry insiders, Borland's debut offering, *Turbo Pascal* (released in November 1983) sold over 15,000 copies in four months. Within a year it had sold more than ten times that amount.

That success was far surpassed by Borland's second product, *Sidekick*, an "electronic organizer" that features a set of interactive, integrated windows, allowing a user to perform a variety of tasks without leaving a resident program. With *Sidekick* in operation, one can have *1-2-3* or *Wordstar* loaded while having the ability to take notes, do calculator computations, dial the phone, jot down appointments on a calendar, or perform ASCII conversions at the same time.

As Borland approaches its second birthday it has a full range of Pascal programs on the market including *Turbo Pascal* (for Z80 and 8088/86 microcomputers), *Turbo Pascal 87* (for 8087 support on 16-bit machines), *Turbo Toolbox* (a program that works with *Turbo Pascal* and includes



Kahn attributes much of Borland's success to its creative teamwork in small groups.

fast file access and sort capabilities), *Turbo Graphix Toolbox* (which provides a set of graphics to be used with *Turbo Pascal*) and *Turbo Turtle* (an introduction to Pascal with guidelines for developing assembly language procedures). *Superkey*, shipped in February, is a keyboard enhancement program which allows users to design a keyboard for their own personal use, replacing frequently used commands and/or text with a single keystroke.

Despite its small catalogue, Borland is clearly doing something right. The company was named "Company of the Year, 1985" by *PC Magazine*, and *Sidekick* was named "Product of the Year, 1985" by *Infoworld*. In addition, *Turbo Pascal* was included in the Top Ten Products of 1984 by *PC Week* and the language has been selected as the official language for a national student programming competition.

And what's up for the future? Philippe Kahn knows but he's not talking . . .

"Oh, there are lots of new things but our policy now is that when something new is ready we'll call a press conference to announce it and the same day we'll ship it," he says. "We're working on six or seven products now but there's nothing we want to pre-announce."

— Jeff Spurrier

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because they'll always be around. It's not a hits thing, it's a necessity. For education, for business, for hobbyists. That's our main strategy now. We will have the Basic language, C, Modular 2, assembler, with the same strategy — a whole group of products [like the Pascal series]. Look at MicroSoft, that's a solid company. They built the company around languages. The hits business is fun and we've got two hits now, *Sidekick* and *Super Key*. But one day we'll miss, and if you base your whole strategy upon hits you'll be in trouble.

You've made a point of avoiding borrowing money to build Borland through venture capital, yet everyone else in the industry does this. Why are you so adverse to venture capital?

Because we want to be independent. As soon as you have outside investors then you have to abide by their rules — copy-protect software, protect the company with stupid licensing agreements. We want to do business our way and I think our end users respect us. By protecting our customers we do protect our shareholders. Most companies don't believe that. It's a different philosophy [from most software businessmen]. People in this business are too greedy to get rich. We never started this company hoping to become millionaires, just to make a decent living. I didn't have a choice. I was broke and no one wanted to hire me in those high tech jobs because I didn't have a green card. The idea was to survive. We probably have become "millionaires" although I haven't ever checked. That was never the goal and that's

"A lot of software companies are saying, 'Borland's not viable. You can't make a business by selling software at this price.' So why do they worry? Why do they scream? We'll go out of business. I think by now they know we won't."

probably why it worked — because it wasn't important for us. What was important was to have fun and make great products and make our customers happy.

Is there any plan to bundle your software with hardware or software manufacturers? Recently you signed a deal with AST to include *Sidekick* with every board they ship...

We don't bundle. I hate that word, I hate the words "free software." Those terms were invented by Adam Osborne and now that he's in the software business he feels bad about it. Software is not free and if you give the people the idea that it is, then, sure, they'll copy it and rip you off. The AST deal is a distribution agreement — a fantastic distribution deal for us. They ship over 40,000 boards a month and in addition to what we sell, more than 40,000 other people are going to get an edition of *Sidekick* and a catalogue of Borland products. It's a distribution deal, not a bundling.

Usually when they have bundled or free software it's second-rate software that's not selling anymore and they put it with hardware to generate revenue. *Sidekick* is a best-seller now. What we did was take the best-selling add-on piece of hardware for the PC, which is the AST SixPak Plus, and the best-selling product for the PC besides *1-2-3*, which is *Sidekick*.

It's a joint venture, an alliance. We believe in putting our products in as many hands as possible. There might have been some resistance because of how low we price our products. People say, "I didn't buy *Sidekick* because it was too cheap. I bought the expensive one."

Do you think that people think that *Sidekick* is a game because it's priced so low?

I hope people do think it's a game.

Really?

Sure. If it can make your daily work like a game instead of work, it's wonderful. If using business software can feel like playing a game that's great. That's one of the taboos. A computer should be fun to use.

Do you think your low prices upset other software manufacturers?

I don't care if it upsets them or not. I think it pleases our customers. If they're upset then there's a problem.

A lot of software companies are saying "Borland's not viable. You can't make a business by selling software at this price." So why do they worry? Why do they scream? We'll go out of business. They shouldn't worry about it.

I think by now they know we won't. I think it's a general trend. Software prices will go down, and we've been the ones that have done it first, and we'll continue to push them down to reasonable levels. It's true in any industry, it always happens. Software was a new industry. Now you have 8 million PCs so you don't need to sell a piece of software for $600 to make a good living if it's a pretty horizontal product.

I've heard that sometimes you log on to the Go Bor board on CompuServe to chat with users. Why? How do people react when they realize they're talking to the head of Borland?

With amusement. I do it because we want to be end user oriented, so we want to hear what they have to say.

Kahn and friend embark on computer adventures.

And what do they say?

Suggestions. It's amazing how by listening to them you can have great ideas for products. Instead of having three or four guys here trying to think of new products you suddenly have 25,000 people giving you great ideas. For free — if you're willing to listen. I always want to see the complaint letters as well as the compliment letters. We don't get too many complaints but sometimes we do. You get a lot of suggestions by users, because they do different things with the product and might have ideas you didn't have, because you didn't use the product with some other software or some specific condition.

Are you open to outside developers submitting to you?

We are, but we haven't seen anything we want yet that will meet our criteria. So far we develop everything ourselves. I'm very scared of the VisiCorp/Software Arts syndrome. Software Arts developed *VisiCalc* for VisiCorp and then they started fighting about it. Software Arts wanted the glory and more money. They were getting $14 million a year just to sit there. Two guys. They didn't upgrade the product for VisiCorp, so they lost the market and Lotus came in and bought them out. So we're very scared of that kind of relationship. I believe in controlling your technology. As long as you control your technology, you have the ability to create new versions, upgrade your software.

Do you worry about industrial espionage?

Within the company? Yeah, we're becoming more cautious. We've been had a few times. One guy left with a few ideas we'd had and tried to start his own company, but he failed because he didn't have the ability to make software. Thinking of ideas is one thing but making it work is another. He even raised capital and persuaded investors that he had good ideas. So now we're very careful about new ideas.

What do you see in the future for software design?

I don't think anybody sees the future. If people tell you they see the future, don't believe them. When a company becomes established — as we're starting to do — they like to say they can see the future. But no matter how you look at it, a couple of guys in a garage somewhere — like we did — will come and show everybody. That's the beauty of the software industry. You don't need big capital investment to make a great piece of software. People say it's a marketing game, but that's not true. It's a technology driven game. If you don't have the marketing you might fail. But if you just have the marketing and no product you're sure to fail in the long run. You must have good products. That's cast in iron. You can't create something out of nothing.

You have children. What do you think kids will be doing in 20 years on computers?

Kids are amazing because they're not afraid of programming like adults. Twelve-year-olds will start writing Pascal programs right away. My impression is that [future kids] will blow us out, make us look real bad. They're so natural and in tune with the object. It's going to be tough coping with them. It's like someone who touches his first piano at 20 compared to a kid who starts when he's four and he's a natural. Like young Mozart and Salieri in *Amadeus*. It's amazing. I see my kids and they understand things so easily. We'll see lots of new directions in software coming from kids because it's the first generation that has had real tools, real computers at the age of five or six. What kind of musicians would we have if nobody could touch a piano until he was in college? Suddenly you've got a whole generation who has gotten computers when they're five or six and they have les-

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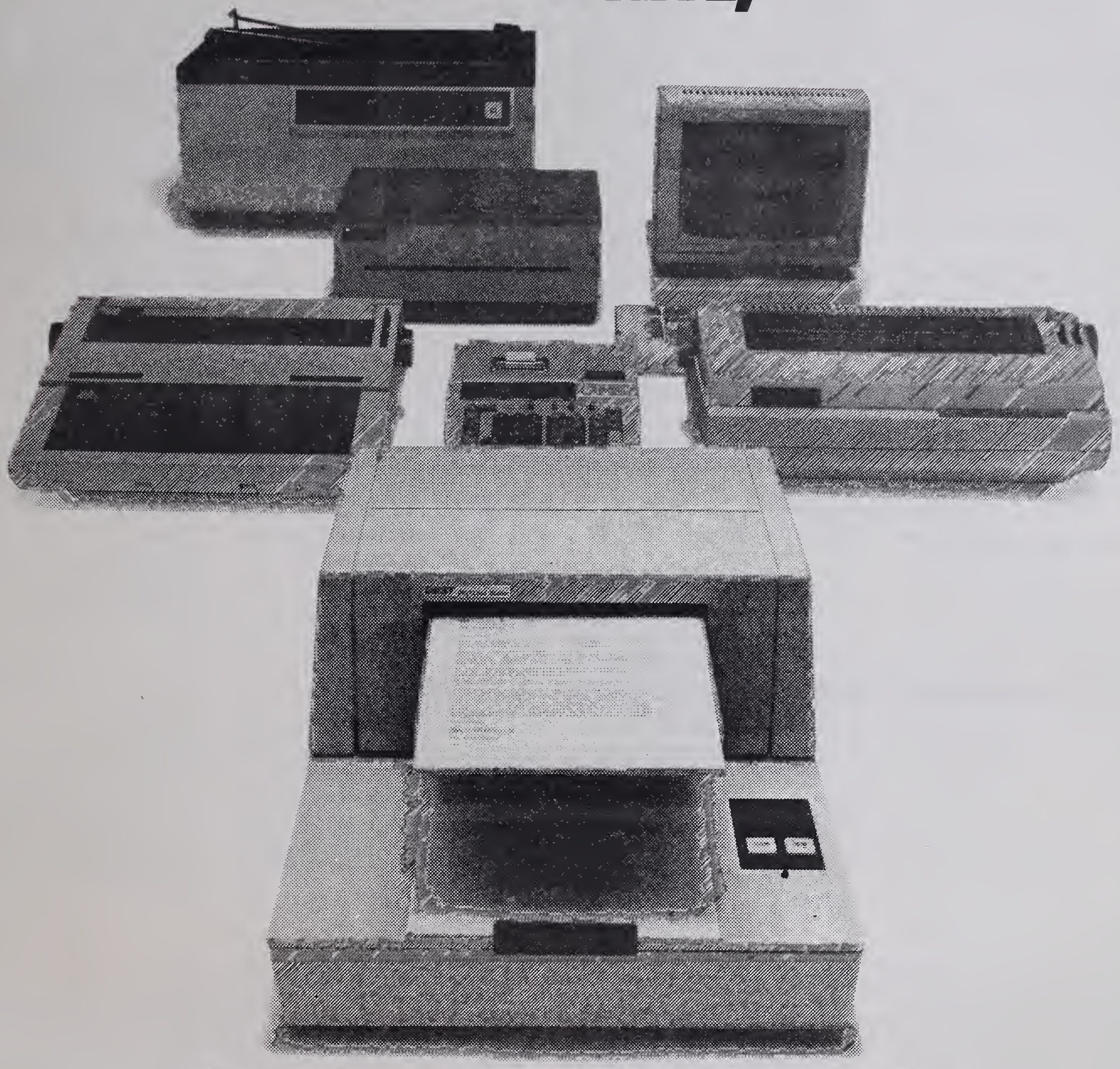

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sons and and they have them at home. It's a big difference.

How old were you when you saw your first PC?

Probably 15 or 16.

Do you remember what you did with it?

Sure. I had a summer job programming geometrical shapes for numerical control machines. You had a machine that would make metal parts, and it was driven by a computer. You needed someone who would translate a drawing of a shape, like a bolt, into mathematical equations and then into the language which the computer would understand. It was a very non-creative job. And then later at university we had mainframes. My first PC was an Apple II, in France. That was the first I had at home that I could play with, with an assembler and all. It was a good machine. It was a great toy.

"Apple had this wonderful $2 billion company and they thought, 'We're going to take on IBM.' That's arrogant. You can't be arrogant with IBM. IBM is like a machine."

What do you think Apple is doing these days?

I don't know if they know what they're doing. It's really sad. Like a lot of people I think Apple made the industry. I would hate to see them disappear, because it's healthy to have competition. An IBM-owned world isn't a good world. IBM needs competition and Apple had the glow and the aura to compete. But they made a fundamental error with the Macintosh by closing the architecture of the machine. They'll probably survive — I hope so — they're rumored to have other machines. But what's still making Apple is the II and the IIc. It's not the Mac. It's amazing. The II is a dinosaur if you think about it. People say the PC is a dinosaur also, but the II is r*eally* a dinosaur. The II has been there for years. Everybody's hat should be off to Steve Wozniak. Everybody talks about Steve Jobs, but the reason Apple's here today is because of Wozniak's Apple II motherboard. I think the problems Apple has now is because the II people and the Mac people are fighting for recognition and it's obvious the II people should have it. They made the company.

Would you like to design hardware? What's the ideal computer?

Maybe no computer. It should be transparent to the user. You just think about it and it logs on.

The problem with those stupid computers is that they're very powerful when you have them, but when you're somewhere without them and that power you're lost. The hardware business is crazy. I wouldn't touch that for the world. Making another PC today is crazy. How many IBM compatibles are there — 80, 90? What are they bringing to the table? Nothing.

Essentially there is IBM, Apple, and then Atari and Commodore. Apple's main error was like what happened with minis and mainframes. There are all these companies like DEC and Data General that never realized that their real [mainframe and mini] market was the non-IBM customer. They all focused on IBM, never realizing their support base was the non-IBM market. Apple until now has not realized that their market is a non-IBM market. They can't look at IBM's market share and say "We'll eat a slice of it." They won't. That's IBM's. Traditionally. And Apple is going to be in trouble until they realize that, because Atari and Commodore and Wang and all these other companies will eat up the non-IBM market while they're focusing on IBM. It's a fundamental strategic error. They had this wonderful $2 billion company and they thought "We're going to take on IBM." That's arrogant. You can't be arrogant with IBM. IBM is like a machine. And even now they're still trying to go after IBM and show IBM people as bad guys through those ads — which are very creative, but do they sell PCs? I don't think they ever sold one more Apple because of those ads. They're image ads. And every time you waste money by selling image, essentially your customer is paying for it because your costs are going up.

You don't sell image?

No, we don't sell image. We sell products. All our ads sell products — not the company. We want people to buy products. Otherwise you end up building a cost structure that's not manageable at the price levels we're selling products. And then the consumer ends up paying the bills.

I get involved in the advertising and the R&D. I think advertising should be like news so that people learn something from it. I don't want people to think we're selling soap, with wonderful images. We do everything ourselves. We do all our R&D, our advertising, our banking — we don't have loans. We live in a little closed world here. And it's kind of fun.

What software do you like (besides your own) that's out now?

I do like our software. I like *Wordstar* still.

No *Microsoft Word?*

I think there are good ideas in it. They did a good job but it's too buggy yet and too slow for me. *Wordstar* is much faster and more powerful. I use *Wordstar* still, even though I have *Word*. I don't use database managers because I'd rather write them in Pascal with our toolbox. It's much easier to do and much faster and more efficient. And I have more control over things. The spreadsheet I like the most is *SuperCalc 3*. It's much better than *1-2-3* even though that's the standard.

You've made the comparison between software and book publishing. Do you really see the comparison so strongly?

There is a comparison in the act. We're selling a book with a diskette that sells for a little more than a hardbound book and we sell in much the same fashion. That's about where the comparison starts and ends.

When you buy a book you don't expect the characters in the book to change all the time. Software changes. It bugs, it reacts differently, it moves. You have upgrades. A book might have a new preface in the 2nd edition but that's all that's different. And you don't have technical support for books. And the process of creating also can't be forecast. It's a creative process — an accident like I said earlier. From that point on it's hard work, scientific work, coding, choosing algorithms. Getting things to work. There's nothing artistic about it. It's almost like playing a whole tune and then having to write it down in staff notation. There's not much artistic about all that — just hard work.

Do you see a connection between programming and music?

I don't know if there's a connection but I know that most people that are involved with software somehow are also involved with music — either they can play or have played or listen a lot. I carried my way through college playing music as a semi-pro in France. I used to play saxophones.

You don't play anymore?

Only when a party gets wild enough or I'm drunk enough to pick up a horn. I don't have time [to play] anymore.

Do you sometimes feel that maybe you got sidetracked from music? Would you rather be playing music?

I wasn't good enough to make a decent living at it. I like music, but you have to be damn good to make a decent living and be able to play the music you want to play. Most of the people I know who play music professionally don't play what they want. They do studio sessions, marriages, stupid stuff. They're making money okay, but I think they're having less fun than I'm having doing this, doing software. I was into modern jazz and that's really no way to make a living. Rock maybe but modern jazz . . . who makes a living? Not even the best guys. So, there are no regrets.

Do you foresee increased software competition coming from outside the U.S.?

Sure. If you look at the costs of development in the U.S. and programming here, smart companies will do what hardware makers did with production by setting up production facilities in Hong Kong or Taiwan. Development will happen overseas. There's no question. You already see it in the game business. A lot of the arcade games are not written in the U.S. anymore — some are written in the Eastern Bloc even.

Really?

Yeah, the Eastern Bloc is going to provide a lot of software development. We ourselves have two development centers overseas (one in London and one in Copenhagen) and we intend to set up a development thing in India also. You get excellent mathematicians and programmers there and the salaries are ridiculous compared to what you get in the U.S. A Ph.D. in India costs you $400 a month — and those people are smart. With hardware you need a lot of equipment. With software you don't need anything. Just a PC and a plug, and then you need a little brains. Software is freedom. Software is a direct extension of the human mind. It's just getting the machine to do things. It's not making dreams come true.

"Software is freedom. Software is a direct extension of the human mind. It's just getting the machine to do things, it's not making dreams come true."

Why don't you have a development center in France?

We have a saying in French: "No one is a prophet in his own land."

Do you think it's still possible for two guys in a garage to build a multi-million dollar software company?

Sure. We did it. If they have a great idea, no problem. People who say it can't be done just fear that it can't be done. I say it can be done. It's tough, but when we started everybody said it couldn't be done without $10 million in venture capital. But we did it. It's just people who love it to be impossible who say it can't be done — large software companies probably.

What kind of image do you think Borland has in the Silicon Valley?

Crazy guys who are trying to turn around the industry. I guess that's the image — software anarchists who do street marketing. That's the image I want the company and myself to have, that we're the wild cards. Whatever happens at Borland will surprise people and disturb the establishment. Maybe [the image is] the punk rockers of the software industry. □

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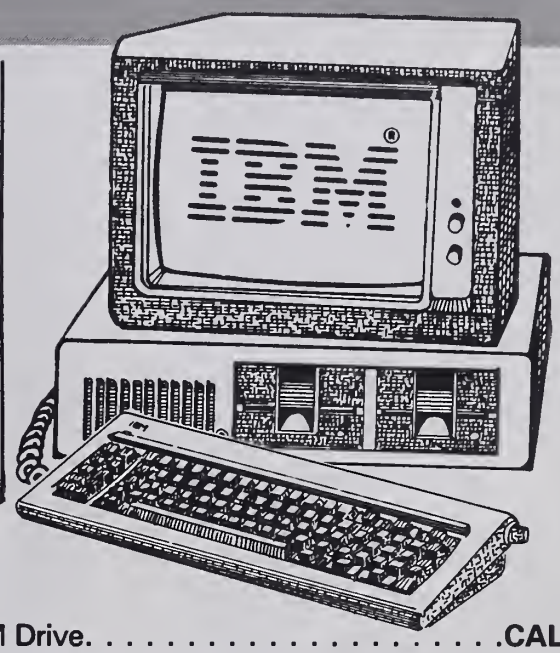

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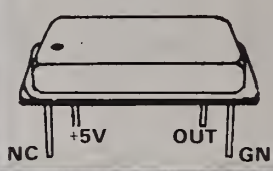

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HM6264P-15 8Kx8 STATIC 150ns 10.25 SSI263 SPEECH SYNTHESIZER 39.95

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74S00	.32	74S135	.89	74S244	2.20
74S02	.35	74S138	.85	74S251	.95
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74S10	.35	74S158	.95	74S274	19.95
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74S30	.35	74S169	3.95	74S288	1.90
74S32	.40	74S174	.95	74S289	6.98
74S37	.88	74S175	.95	74S299	7.35
74S38	.85	74S180	11.95	74S301	6.95
74S40	.35	74S181	3.95	74S373	2.45
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7400

7400	.19	7483	.50	74172	5.95
7401	.19	7485	.59	74173	.75
7402	.19	7486	.35	74174	.89
7403	.19	7489	2.15	74175	.89
7404	.19	7490	.35	74176	.89
7405	.25	7491	.40	74177	.75
7406	.29	7492	.50	74178	1.15
7407	.29	7493	.35	74179	1.75
7408	.24	7494	.65	74180	.75
7409	.19	7495	.55	74181	2.25
7410	.19	7496	.70	74182	.75
7411	.25	7497	2.75	74184	2.00
7412	.30	74100	1.75	74185	2.00
7413	.35	74105	1.14	74189	2.99
7414	.49	74107	.30	74190	1.15
7416	.25	74109	.45	74191	1.15
7417	.25	74110	.45	74192	.79
7420	.19	74111	.55	74193	.79
7421	.35	74116	1.55	74194	.85
7422	.35	74120	1.20	74195	.85
7423	.29	74121	.29	74196	.79
7425	.29	74122	.45	74197	.75
7426	.29	74123	.49	74198	1.35
7427	.29	74125	.45	74199	1.35
7428	.45	74126	.45	74221	1.35
7430	.19	74128	.55	74246	1.35
7432	.29	74132	.45	74247	1.25
7433	.45	74136	.50	74248	1.85
7437	.29	74141	.65	74249	1.95
7438	.29	74142	2.95	74251	.75
7439	.79	74143	4.95	74259	2.25
7440	.19	74144	2.95	74265	1.35
7442	.49	74145	.60	74273	1.95
7443	.65	74147	1.75	74276	1.25
7444	.69	74148	1.20	74278	3.11
7445	.69	74150	1.35	74279	.75
7446	.69	74151	.55	74283	2.00
7447	.69	74152	.65	74284	3.75
7448	.69	74153	.55	74285	3.75
7450	.19	74154	1.25	74290	.95
7451	.23	74155	.75	74293	.75
7453	.23	74156	.65	74298	.85
7454	.23	74157	.55	74351	2.25
7460	.23	74159	1.65	74365	.65
7470	.35	74160	.85	74366	.65
7472	.29	74161	.69	74367	.65
7473	.34	74162	.85	74368	.65
7474	.33	74163	.69	74376	2.20
7475	.45	74164	.85	74390	1.75
7476	.35	74165	.85	74393	1.35
7480	.59	74166	1.00	74425	3.15
7481	1.10	74167	2.96	74426	.85
7482	.95	74170	1.65	74490	2.55

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4000	.29	4531	.95
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4015	.39	4581	1.95
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4019	.39	45151	12.95
4020	.75	4702	12.95
4021	.79	4724	1.50
4022	.79	74C00	.35
4023	.29	74C02	.35
4024	.65	74C04	.35
4025	.29	74C08	.35
4026	1.65	74C10	.35
4027	.45	74C14	.59
4028	.69	74C20	.35
4029	.79	74C30	.35
4030	.39	74C32	.39
4034	1.95	74C42	1.29
4035	.85	74C48	1.99
4040	.75	74C73	.65
4041	.75	74C74	.65
4042	.69	74C76	.80
4043	.85	74C83	1.95
4044	.79	74C85	1.95
4046	.85	74C86	.39
4047	.95	74C89	4.50
4048	.69	74C90	1.19
4049	.35	74C93	1.75
4050	.35	74C95	.99
4051	.79	74C150	5.75
4052	1.99	74C151	2.25
4053	.79	74C154	3.25
4060	.89	74C157	1.75
4066	.39	74C160	1.19
4068	.39	74C161	1.19
4069	.29	74C162	1.19
4070	.35	74C163	1.19
4071	.29	74C164	1.39
4072	.29	74C165	2.00
4073	.29	74C173	.79
4075	.29	74C174	1.19
4076	.79	74C175	1.19
4077	.59	74C192	1.49
4078	.29	74C193	1.49
4081	.29	74C195	1.39
4082	.29	74C200	5.75
4085	.95	74C221	1.75
4086	.95	74C244	2.25
4093	.49	74C373	2.45
4094	2.99	74C374	2.45
4098	2.49	74C901	.39
4099	1.95	74C902	.85
14409	12.95	74C903	.85
14410	12.95	74C905	10.95
14411	11.95	74C906	.95
14412	12.95	74C907	1.00
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4507	1.25	74C914	1.95
4508	1.95	74C915	1.19
4510	.85	74C918	2.75
4511	.85	74C920	17.95
4512	.85	74C921	15.95
4514	1.25	74C922	4.49
4515	1.79	74C923	4.95
4516	1.55	74C925	5.95
4518	.89	74C926	7.95
4519	.39	74C927	7.95
4520	.79	74C928	7.95
4521	4.99	74C929	19.95
4522	1.25	74C930	4.95
4526	1.25	80C95	.85
4527	1.95	80C96	.95
4528	1.19	80C97	.95
4529	2.95	80C98	1.20

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74HC00

74HC: Operate at CMOS logic levels and are ideal for new, all-CMOS designs.

74HC00	.59	74HC175	.99
74HC02	.59	74HC193	1.25
74HC04	.59	74HC194	1.04
74HC08	.59	74HC195	1.09
74HC10	.59	74HC238	1.35
74HC11	.59	74HC240	1.89
74HC14	.79	74HC241	1.89
74HC20	.59	74HC242	1.89
74HC27	.59	74HC243	1.89
74HC30	.59	74HC244	1.89
74HC32	.69	74HC245	1.89
74HC51	.59	74HC251	.89
74HC74	.75	74HC257	.85
74HC75	.85	74HC259	1.39
74HC85	1.35	74HC273	1.89
74HC86	.69	74HC299	4.99
74HC93	1.19	74HC367	.99
74HC125	1.19	74HC373	2.29
74HC132	1.19	74HC374	2.29
74HC138	.99	74HC393	1.39
74HC139	.99	74HC4017	1.99
74HC151	.89	74HC4020	1.39
74HC153	.89	74HC4024	1.59
74HC154	2.49	74HC4040	1.39
74HC157	.89	74HC4049	.89
74HC161	1.15	74HC4050	.89
74HC164	1.25	74HC4060	1.29
74HC166	2.95	74HC4511	2.39
74HC174	.99	74HC4538	2.29

74HCT00

74HCT: Direct, drop-in replacements for LS TTL and can be intermixed with 74LS in the same circuit.

74HCT00	.69	74HCT175	1.09
74HCT02	.69	74HCT193	1.39
74HCT04	.69	74HCT194	1.19
74HCT08	.69	74HCT195	1.29
74HCT10	.69	74HCT238	1.49
74HCT11	.69	74HCT240	2.19
74HCT14	.89	74HCT241	2.19
74HCT20	.69	74HCT242	2.19
74HCT27	.69	74HCT243	2.19
74HCT30	.69	74HCT244	2.19
74HCT32	.79	74HCT245	2.19
74HCT51	.69	74HCT251	1.09
74HCT74	.85	74HCT257	.99
74HCT75	.95	74HCT259	1.59
74HCT85	1.49	74HCT273	2.09
74HCT86	.79	74HCT299	5.25
74HCT93	1.29	74HCT367	1.09
74HCT125	1.29	74HCT373	2.49
74HCT132	1.29	74HCT374	2.49
74HCT138	1.15	74HCT393	1.59
74HCT139	1.15	74HCT4017	2.19
74HCT151	1.05	74HCT4020	1.59
74HCT153	1.05	74HCT4024	1.79
74HCT154	2.99	74HCT4040	1.59
74HCT157	.99	74HCT4049	.99
74HCT161	1.29	74HCT4050	.99
74HCT164	1.39	74HCT4060	1.49
74HCT166	3.05	74HCT4511	2.69
74HCT174	1.09	74HCT4538	2.59

VOLTAGE REGULATORS

TO-220 CASE PACKAGE

7805T	.75	7905T	.85
7808T	.75	7908T	.85
7812T	.75	7912T	.85
7815T	.75	7915T	.85
7824T	.75	7924T	.85

TO-3 CASE PACKAGE

7805K	1.39	7905K	1.49
7812K	1.39	7912K	1.49
7815K	1.39	7915K	1.49
7824K	1.39	7924K	1.49

TO-92 CASE PACKAGE

78L05	.69	79L05	.79
78L12	.69	79L12	.79
78L15	.69	79L15	.79

OTHER VOLTAGE REGS

78M05C	5volt	½amp	TO-220	.35
LM323K	5volt	3amp	TO-3	4.95
LM338K	Adj.	5amp	TO-3	3.95
78H05K	5volt	5amp	TO-3	9.95
78H12K	12volt	5amp	TO-3	9.95
78P05K	5volt	10amp	TO-3	14.95
UA78S40	FAIRCHILD		DIP	1.95

LINEAR

LM301	.34	NE570	3.95
LM301H	.79	NE571	2.95
LM307	.45	NE590	2.50
LM308	.69	NE592	.98
LM308H	1.15	LM709	.59
LM309H	1.95	LM710	.75
LM309K	1.25	LM711	.79
LM310	1.75	LM723	.49
LM311	.64	LM723H	.55
LM311H	.89	LM733	.98
LM312H	1.75	LM741	.35
LM317K	3.95	LM741N-14	.35
LM317T	1.19	LM741H	.40
LM318	1.49	LM747	.69
LM318H	1.59	LM748	.59
LM319H	1.90	LM1014	1.19
LM319	1.25	LM1303	1.95
LM320	see7900	LM1310	1.49
LM322	1.65	MC1330	1.69
LM323K	4.95	MC1349	1.89
LM324	.59	MC1350	1.19
LM329	.65	MC1358	1.69
LM331	3.95	MC1372	6.95
LM334	1.19	LM1414	1.59
LM335	1.40	LM1458	.59
LM336	1.75	LM1488	.69
LM337T	1.95	LM1489	.69
LM337K	3.95	LM1496	.85
LM338K	3.95	LM1558H	3.10
LM339	.99	LM1800	2.37
LM340	see7800	LM1812	8.25
LM348	.99	LM1830	3.50
LM350K	4.95	LM1871	5.49
LM350T	4.60	LM1872	5.49
LM358	.69	LM1877	3.52
LM359	1.79	LM1889	1.95
LM376	3.75	LM1896	1.75
LM377	1.95	ULN2003	1.29
LM378	2.50	XR2206	3.75
LM379	4.50	LM2877	2.05
LM380	.89	LM2878	2.25
LM380N-8	1.10	LM2900	.85
LM381	1.60	LM2901	1.00
LM382	1.60	MPQ2907	1.95
LM383	1.95	LM2917	2.95
LM384	1.95	MC3487	2.95
LM386	.89	LM3900	.59
LM387	1.40	LM3905	1.25
LM389	1.35	LM3909	.98
LM390	1.95	LM3911	2.25
LM392	.69	LM3914	3.95
LM393	1.29	LM3915	3.95
LM394H	4.60	LM3916	3.95
LM399H	5.00	MC4024	3.95
NE531	2.95	MC4044	4.50
NE555	.34	RC4136	1.25
NE556	.65	RC4151	3.95
NE558	1.50	LM4250	1.75
NE564	2.95	LM4500	3.25
LM565	.99	RC4558	.69
LM566	1.49	LM13600	1.49
LM567	.89	LM13700	1.45

H=TO-5 CAN, K=TO-3, T=TO-220

RCA

CA3023	2.75	CA3083	1.55
CA3039	1.29	CA3086	.80
CA3046	1.25	CA3089	2.99
CA3059	2.90	CA3096	3.49
CA3060	2.90	CA3130	1.30
CA3065	1.75	CA3140	1.15
CA3080	1.10	CA3146	1.85
CA3081	1.65	CA3160	1.19
CA3082	1.65	CA3183	.99

TI

TL494	4.20	75365	1.95
TL496	1.65	75450	.59
TL497	3.25	75451	.39
75107	1.49	75452	.39
75108	1.49	75453	.39
75110	1.95	75454	.39
75150	1.95	75477	1.29
75154	1.95	75491	.79
75160	4.95	75492	.79
75188	1.25	75493	.89
75189	1.25	75494	.89

BI FET

TL066	.99	LF347	2.19
TL071	.79	LF351	.60
TL072	1.19	LF353	1.00
TL074	2.19	LF355	1.10
TL081	.79	LF356	1.10
TL082	1.19	LF357	1.40
TL083	1.19	LF411	1.29
TL084	2.19	LF412	1.99

SPECTRONICS CORPORATION

EPROM ERASERS

	Timer	Capacity Chip	Intensity (uW/Cm²)	
PE-14		9	8,000	$83.00
PE-14T	x	9	8,000	$119.00
PE-24T	x	12	9,600	$175.00
PL-265T	x	30	9,600	$255.00
PR-125T	x	25	17,000	$349.00
PR-320T	x	42	17,000	$595.00

TRANSISTORS

2N918	.50	2N3772	1.85
MPS918	.25	2N3903	.25
2N2102	.75	2N3904	.10
2N2218	.50	2N3906	.10
2N2218A	.50	2N4122	.25
2N2219	.50	2N4123	.25
2N2219A	.50	2N4249	.25
2N2222	.25	2N4304	.75
PN2222	.10	2N4401	.25
MPS2369	.25	2N4402	.25
2N2484	.25	2N4403	.25
2N2905	.50	2N4857	1.00
2N2907	.25	PN4916	.25
PN2907	.13	2N5086	.25
2N3055	.79	PN5129	.25
3055T	.69	PN5139	.25
2N3393	.30	2N5209	.25
2N3414	.25	2N6028	.35
2N3563	.40	2N6043	1.75
2N3565	.40	2N6045	1.75
PN3565	.25	MPS-A05	.25
MPS3638	.25	MPS-A06	.25
MPS3640	.25	MPS-A13	.40
PN3643	.25	MPS-A55	.25
PN3644	.25	MPU-131	.99
MPS3704	.15	TIP29	.65
MPS3706	.15	TIP31	.75
		TIP32	.79

IC SOCKETS

	1-99	100
8 PIN ST	.13	.11
14 PIN ST	.15	.12
16 PIN ST	.17	.13
18 PIN ST	.20	.18
20 PIN ST	.29	.27
22 PIN ST	.30	.27
24 PIN ST	.30	.27
28 PIN ST	.40	.32
40 PIN ST	.49	.39
64 PIN ST	4.25	CALL
8 PIN WW	.59	.49
14 PIN WW	.69	.52
16 PIN WW	.69	.58
18 PIN WW	.99	.90
20 PIN WW	1.09	.98
22 PIN WW	1.39	1.28
24 PIN WW	1.49	1.35
28 PIN WW	1.69	1.49
40 PIN WW	1.99	1.80

ST=SOLDERTAIL

WW=WIREWRAP

INTERFACE

8T26	1.59
8T28	1.98
8T95	.89
8T96	.89
8T97	.89
8T98	.89
DM8131	2.95
DP8304	2.29
DS8833	2.25
DS8835	1.99
DS8836	.99
DS8837	1.65
DS8838	1.30

INTERSIL

ICL7106	9.95
ICL7107	12.95
ICL7660	2.95
ICL8038	3.95
ICM7207A	5.59
ICM7208	15.95

DATA ACQ

ADC0800	15.55
ADC0804	3.49
ADC0809	4.49
ADC0816	14.95
ADC0817	9.95
ADC0831	8.95
DAC0800	4.49
DAC0806	1.95
DAC0808	2.95
DAC1020	8.25
DAC1021	7.95
DAC1022	5.95
MC1408L6	1.95
MC1408L8	2.95

EXAR

XR2206	3.75
XR2207	3.75
XR2208	3.75
XR2211	5.25
XR2240	3.25

9000

9304	.95
9316	1.00
9328	1.49
9334	2.50
9368	3.95
9401	9.95
9601	.75
9602	1.50
9637	2.95
96S02	1.95

SOUND CHIPS

76477	3.95
76488	5.95
76489	8.95
SSI-263	39.95
AY3-8910	12.95
AY3-8912	12.95
MC3340	1.49
SP1000	39.00

OPTO-ISOLATORS

4N26	1.00	MCA-7	4.25
4N27	1.10	MCA-255	1.75
4N28	.69	IL-1	1.25
4N33	1.75	ILA-30	1.25
4N35	1.25	ILQ-74	2.75
4N37	1.25	H11C5	1.25
MCT-2	1.00	TIL-111	1.00
MCT-6	1.50	TIL-113	1.75

I have had nothing but good experiences with JDR and look foward to more of the same. It's not often a company is willing to help customers to the extent JDR has.

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DB25P RS232 MALE SOLDER CUP 1.90

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2x40	RIGHT ANGLE	2.99

SHORTING BLOCKS

SPACED AT .1" CENTERS
IDEAL FOR DISK DRIVES
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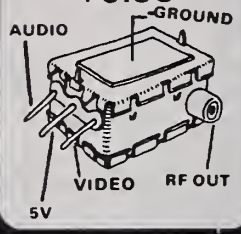
6 POSITION	.90
7 POSITION	.95
8 POSITION	.95
10 POSITION	1.29

RF MODULATOR (ASTEC UM1082)

QUANTITIES LIMITED

- PRESET TO CHANNEL 3
- USE TO BUILD TV-COMPUTER INTERFACE
- +5 VOLT OPERATION

$6.95



EDGECARD CONNECTORS

S-100 ST	S-100	3.95
S-100 WW	S-100	4.95
72 PIN ST		6.95
72 PIN WW		7.95
62 PIN ST	IBM PC	4.95
50 PIN ST	APPLE	4.95
44 PIN ST		2.95
44 PIN WW		4.95

36 PIN CENTRONICS

IDCEN36	RIBBON CABLE MALE	8.95
IDCEN36/F	RIBBON CABLE FEMALE	8.95
CEN36	SOLDER CUP MALE	7.95

EMI FILTER

- MAJOR MANUFACTURER
- LOW COST
- FITS LC-HP BELOW

$4.95

LINE CORDS

LC-2	2 CONDUCTOR	6 ft	.39
LC-3	3 CONDUCTOR	6 ft	.99
LC-HP	3 CONDUCTOR WITH STANDARD FEMALE SOCKET	6 ft	1.49
LC-CIR	CIGARETTE LIGHTER PLUG WITH 6 FOOT CORD		2.95

MUFFIN FANS

4.68" SQUARE	14.95
3" SQUARE	14.95

RESISTORS

¼ WATT 5% CARBON FILM
ALL STANDARD VALUES
FROM 1 OHM TO 10 MEG OHM

50 PIECES SAME VALUE	.025
100 PIECES SAME VALUE	.02
1000 PIECES SAME VALUE	.015

BYPASS CAPS

.01 µf DISC	100/$6.00
.01 µf MONOLITHIC	100/$12.00
.1 µf DISC	100/$8.00
.1 µf MONOLITHIC	100/$15.00

DIODES

1N751	5.1 VOLT ZENER	.25
1N759	12.0 VOLT ZENER	.25
1N4148	(1N914)SWITCHING	25/1.00
1N4001	50PIV 1A	12/1.00
1N4004	400PIV RECTIFIER	10/1.00
1N5402	200PIV 3A	.25
KBP02	200PIV 1.5A BRIDGE	.45
KBP04	400PIV 1.5A BRIDGE	.55
MDA801	50PIV 12A BRIDGE	1.39
MDA980-1	50PIV 12A BRIDGE	1.95
MDA980-2	100PIV 12A BRIDGE	2.25
VM48	DIP-BRIDGE	.35

CAPACITORS

TANTALUM

1.0µf	15V	.40	.47µf	35V	.50
6.8	15V	.70	1.0	35V	.45
10	15V	.80	2.2	35V	.65
22	15V	1.35	4.7	35V	.85
.22	35V	.40	10	35V	1.00

DISC

10pf	50V	.05	560	50V	.05
22	50V	.05	680	50V	.05
25	50V	.05	820	50V	.05
27	50V	.05	.001µf	50V	.05
33	50V	.05	.0015	50V	.05
47	50V	.05	.0022	50V	.05
56	50V	.05	.005	50V	.05
68	50V	.05	.01	50V	.07
82	50V	.05	.02	50V	.07
100	50V	.05	.05	50V	.07
220	50V	.05	.1	12V	.10

MONOLITHIC

.01µf	50V	.14	.1µf	50V	.18
.047µf	50V	.15	.47µf	50V	.25

ELECTROLYTIC

RADIAL			AXIAL		
1µf	25V	.14	1µf	50V	.14
2.2	35V	.15	4.7	16V	.14
4.7	50V	.15	10	16V	.14
10	50V	.15	10	50V	.16
47	35V	.18	22	16V	.14
100	16V	.18	47	50V	.20
220	35V	.20	100	15V	.20
470	25V	.30	100	35V	.25
2200	16V	.60	220	25V	.30
			330	16V	.40
COMPUTER GRADE			500	16V	.42
			1000	16V	.60
44,000µf 30V 3.95			2200	16V	.70
			6000	16V	.85

LED DISPLAYS

HP5082-7760	CC	.43"	1.29
MAN-72	CA	.3"	.99
MAN-74	CC	.3"	.99
FND-357(359)	CC	.375"	1.25
FND-500(503)	CC	.5"	1.49
FND-507(510)	CA	.5"	1.49
TIL-311 4x7 HEX W/LOGIC		.270"	9.95

HEAT SINKS

TO-220	SCREW ON	.35
TO-220	CLIP ON	.35
TO-3	SCREW ON	.95
TO-220	INSULATOR	10/1.00
TO-3	INSULATOR	10/1.00

SWITCHES

SPDT	MINI-TOGGLE ON-ON	1.25
DPDT	MINI-TOGGLE ON-ON	1.50
DPDT	MINI-TOGGLE ON-OFF-ON	1.75
SPST	MINI-PUSHBUTTON N.O.	.39
SPST	MINI-PUSHBUTTON N.C.	.39
BCD OUT 10 POSITION 6 PIN DIP		1.95

DIFFUSED LEDS

		1-99	100-up
JUMBO RED	T1¾	.10	.09
JUMBO GREEN	T1¾	.18	.15
JUMBO YELLOW	T1¾	.18	.15
MOUNTING HDW	T1¾	.10	.09
MINI RED	T1	.10	.09
MINI GREEN	T1	.18	.15
MINI YELLOW	T1	.18	.15
RECT RED	2x5mm	.25	.22
RECT GREEN	2x5mm	.30	.27
RECT YELLOW	2x5mm	.30	.27

DIP CONNECTORS

DESCRIPTION	ORDER BY	CONTACTS								
		8	14	16	18	20	22	24	28	40
HIGH RELIABILITY TOOLED ST IC SOCKETS	AUGATxxST	.99	.99	.99	1.69	1.69	1.89	1.99	2.49	2.99
HIGH RELIABILITY TOOLED WW IC SOCKETS	AUGATxxWW	1.30	1.80	2.10	2.40	2.50	2.90	3.15	3.70	5.40
COMPONENT CARRIES (DIP HEADERS)	ICCxx	.49	.59	.69	.99	.99	.99	.99	1.09	1.49
RIBBON CABLE DIP PLUGS (IDC)	IDPxx	---	.95	.95	---	---	---	1.75	---	2.95

FOR ORDERING INSTRUCTIONS SEE IDC CONNECTORS BELOW

D-SUBMINIATURE

DESCRIPTION		ORDER BY	CONTACTS				
			9	15	25	37	50
SOLDER CUP	MALE	DBxxP	1.19	1.59	1.90	2.85	4.25
	FEMALE	DBxxS	1.50	1.85	2.25	3.90	5.25
RIGHT ANGLE PC SOLDER	MALE	DBxxPR	1.65	2.20	3.00	4.83	---
	FEMALE	DBxxSR	2.18	3.03	3.00	6.19	---
WIRE WRAP	MALE	DBxxPWW	1.69	2.56	3.89	5.60	---
	FEMALE	DBxxSWW	2.76	4.27	6.84	9.95	---
IDC RIBBON CABLE	MALE	IDBxxP	2.95	3.90	4.75	6.95	---
	FEMALE	IDBxxS	3.25	4.29	5.25	7.95	---
HOODS	BLACK	HOOD-B	---	---	.99	---	---
	GREY	HOODxx	.89	.99	.99	1.09	1.19

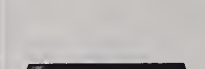
MOUNTING HARDWARE-$1.00
FOR ORDERING INSTRUCTIONS SEE IDC CONNECTORS BELOW

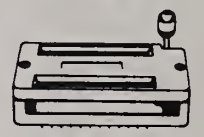
IDB37S

DB37S

DB25SR

TEXTOOL ZERO INSERTION FORCE SOCKETS AND RECEPTACLES


SCREWDRIVER CLAMP ECONO ZIF


LEVER CLAMP ZIF SOCKET

WW RECEPTACLES ZIF RECEPTACLE

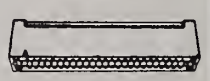
TYPE	CONTACTS				
	14	16	24	28	40
ECONO ZIF	---	4.95	6.75	7.75	9.95
ZIF SOCKET	4.95	4.95	5.95	6.95	9.95
ZIF RECEPTACLE	8.25	8.75	9.75	10.50	12.75

IDC CONNECTORS

DESCRIPTION	ORDER BY	CONTACTS					
		10	20	26	34	40	50
SOLDER HEADER	IDHxxS	.82	1.29	1.68	2.20	2.58	3.24
RIGHT ANGLE SOLDER HEADER	IDHxxSR	.85	1.35	1.76	2.31	2.72	3.39
WW HEADER	IDHxxW	1.86	2.98	3.84	4.50	5.28	6.63
RIGHT ANGLE WW HEADER	IDHxxWR	2.05	3.28	4.22	4.45	4.80	7.30
RIBBON HEADER SOCKET	IDSxx	.79	.99	1.39	1.59	1.99	2.25
RIBBON HEADER	IDMxx	---	5.50	6.25	7.00	7.50	8.50
RIBBON EDGE CARD	IDExx	1.75	2.25	2.65	2.75	3.80	3.95

ORDERING INSTUCTIONS: INSERT THE NUMBER OF CONTACTS IN THE POSITION MARKED "xx" OF THE "ORDER BY" PART NUMBER LISTED. EXAMPLE: A 10 PIN RIGHT ANGLE HOLDER STYLE WOULD BE IDH10SR

IDH20W


IDE50

RIBBON CABLE

CONTACTS	SINGLE COLOR		COLOR CODED	
	1'	10'	1'	10'
10	.18	1.60	.83	7.30
16	.28	2.50	1.00	8.80
20	.36	3.20	1.25	11.00
25	.46	4.00	1.32	11.60
16	.46	4.10	1.32	11.60
34	.61	5.40	1.65	14.50
40	.72	6.40	1.92	16.80
50	.89	7.50	2.50	22.00

JDR Microdevices

1224 S. Bascom Avenue, San Jose, CA 95128
800-538-5000 • 800-662-6279 (CA) • (408) 995-5430
FAX (408) 275-8415 • Telex 171-110

RETAIL STORE - 1256 S. BASCOM AVENUE
HOURS: M-W-F, 9-5 TU-TH, 9-9 SAT, 10-3

PLEASE USE YOUR CUSTOMER NUMBER WHEN ORDERING

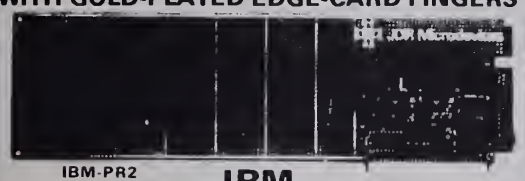
TERMS: Minimum order $10.00. For shipping and handling include $2.50 for UPS Ground and $3.50 for UPS Air. Orders over 1 lb. and foreign orders may require additional shipping charges - please contact our sales department for the amount. CA. residents must include 6% sales tax, Bay Area and LA residents include 6½%. All merchandise is warranted for 90 days unless otherwise stated. Prices are subject to change without notice. We are not responsible for typographical errors. We reserve the right to limit quantities and to substitute manufacturer. All merchandise subject to prior sale.

Copyright 1985 JDR Microdevices

IBM PC PROTOTYPE CARD WITH DECODING CIRCUITRY $29.95

WIRE WRAP PROTOTYPE CARDS

FR-4 EPOXY GLASS LAMINATE WITH GOLD-PLATED EDGE-CARD FINGERS



IBM-PR2

IBM

BOTH CARDS HAVE SILK SCREENED LEGENDS AND INCLUDES MOUNTING BRACKET

IBM-PR1	WITH +5V AND GROUND PLANE	$27.95
IBM-PR2	AS ABOVE WITH DECODING LAYOUT	$29.95

S-100

P100-1	BARE - NO FOIL PADS	$15.15
P100-2	HORIZONTAL BUS	$21.80
P100-3	VERTICAL BUS	$21.80
P100-4	SINGLE FOIL PADS PER HOLE	$22.75

APPLE

P500-1	BARE - NO FOIL PADS	$15.15
P500-3	HORIZONTAL BUS	$22.75
P500-4	SINGLE FOIL PADS PER HOLE	$21.80
7060-45	FOR APPLE IIe AUX SLOT	$30.00

GENERAL PURPOSE

22/44 PIN EDGE-CARD (.156" SPACING)

P441-1	BARE - NO FOIL PADS 4.5" x 6.0"	$9.45
P441-3	VERTICAL BUS 4.5" x 6.0"	$13.95
P441-4	SINGLE FOIL PADS 4.5" x 6.0"	$14.20
P442-1	BARE - NO FOIL PADS 4.5" x 9.0"	$10.40
P442-3	VERTICAL BUS 4.5" x 9.0"	$14.20
P442-4	SINGLE FOIL PADS 4.5" x 9.0"	$13.50

36/72 PIN EDGE-CARD (.1" SPACING)

P721-1	BARE - NO FOIL PADS 4.5" x 6.0"	$9.45
P721-3	VERTICAL BUS 4.5" x 6.0"	$13.25
P721-4	SINGLE FOIL PADS 4.5" x 6.0"	$14.20
P722-1	BARE - NO FOIL PADS 4.5" x 9.0"	$10.40
P722-3	VERTICAL BUS 4.5" x 9.0"	$14.20
P722-4	SINGLE FOIL PADS 4.5" x 9.0"	$15.15

BARE GLASS BOARDS

NO EDGE-CARD FINGERS OR FOIL

P25x45	2.5" x 4.5"	$2.40
P45x65	4.5" x 6.5"	$4.70
P45x85	4.5" x 8.5"	$6.20
P45x170	4.5" x 17.0"	$11.35
P85x170	8.5" x 17.0"	$18.95

EXTENDER CARDS

IBM	$45.00
APPLE	$45.00
MULTIBUS	$86.00

DISK DRIVES

TANDON

TM 100-1 5¼" (FOR IBM) SS/DD	$139.95
TM 100-2 5¼" (FOR IBM) DS/DD	$159.95

MPI

MPI-B52 5¼" (FOR IBM) DS/DD	$109.95

TEAC

FD-55B ½ HEIGHT DS/DD	$119.95
FD-55F ½ HEIGHT DS/QUAD	$139.95

TEAC FD-55B

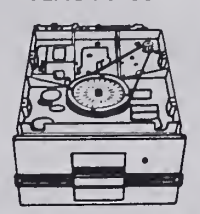
SHUGART

SA 400L 5¼" (40 TRACK) SS/DD	$199.95
SA 460 5¼" (80 TRACK) DS/QUAD	$199.95

8" DISK DRIVES

FD100-8 8Y SIEMENS, SHUGART 801 EQUIV. SS/DD	$129.00
FD200-8 8Y SIEMENS, SHUGART 851 EQUIV. DS/DD	$180.00

JFORMAT-2 $49.95
SUPPORT FOR QUAD DENSITY DRIVES FROM TALL TREE SYSTEMS



TANDON TM100-2

PLEASE INCLUDE SUFFICENT AMOUNT FOR SHIPPING ON ABOVE ITEMS

DISK DRIVE CABINETS

CABINET #1 $29.95
- Fits one full height 5¼"disk drive
- Color matches Apple

CABINET #2 $79.00
- Fits one full height 5¼"disk drive
- Complete with power supply, switch, line cord, fuse and standard power connector
- Please specify Grey or Tan

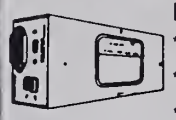
CABINET #3 $89.95
- Fits two half height 5¼"disk drives
- Complete with power supply, switch, line cord, fuse and standard power connectors

8" DISK DRIVE CABINETS ALSO AVAILABLE-PLEASE CALL

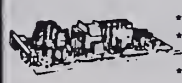
PLEASE INCLUDE SUFFICIENT AMOUNT FOR SHIPPING ON ABOVE ITEMS

SWITCHING POWER SUPPLIES

PS-IBM $159.95
- FOR IBM PC-XT COMPATIBLE
- 130 WATTS
- +5V @ 15A, +12V @ 4.2A -5V @ .5A, -12V @ .5A
- ONE YEAR WARRANTY



PS-A $49.95
- USE TO POWER APPLE TYPE SYSTEMS
- +5V @ 4A, +12V @ 2.5A -5V @ .5A, -12V @ .5A
- APPLE POWER CONNECTOR



PS-3 $39.95
- AS USED IN APPLE III
- +5V @ 4A, +12V @ 2.5A -5V @ .25A, -12V @ .30A,
- 15.5" x 4.5" x 2", .884 LBS.

PS-ASTEC $19.95
- CAN POWER TWO 5¼" FDDS
- +5V @ 2.5A, +12V @ 2A -12V @ .1A
- +5V @ 5A IF +12V IS NOT USED
- 6.3" x 4.0" x 1.9"

OK INDUSTRIES

EX-1 IC EXTRACTION TOOL

- ONE PIECE METAL CONSTRUCTION
- EASILY EXTRACTS 8-24 PIN DEVICES
- LOW COST $2.19

EX-1

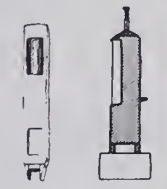
EX-2 IC EXTRACTION TOOL

- EXTRACTS 24-40 PIN DEVICES
- HEAVY DUTY METAL CONSTRUCTION
- GROUND LUGS FOR MOS EXTRACTIONS
- EASY ONE HAND OPERATION $12.74

IC INSERTION TOOLS

INS-1416	for 14-16 pin IC's	$5.15
MOS-1416	for 14-16 pin IC's	$10.92
MOS-2428	for 24-28 pin IC's	$10.92
MOS-40	for 40 pin IC's	$12.43

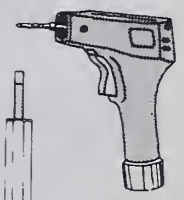
MOS series insertion tools have metal constuction and include grounding lug for CMOS applications.



INS-1416 INS-2428

BW-630 WIRE WRAP GUN

- BATTERY POWERED-USES 2 NI-CAD C CELLS(NOT INCLUDED)
- POSITIVE INDEXING
- ANTI-OVERWRAP DEVICE $41.55

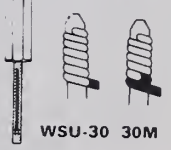


BW-630

WSU-30 WIRE WRAP TOOLS

- WRAPS, STRIPS, AND UNWRAPS
- WSU-30M WRAPS AN EXTRA TURN OF INSULATION

WSU-30 $8.84/WSU-30M $10.14



WSU-30 30M

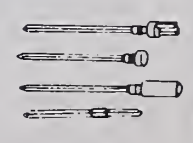
WIRE WRAP TERMINALS

WWT-1	SLOTTED	25/$7.06
WWT-2	SINGLE SIDED	25/$4.25
WWT-3	IC SOCKET	25/$7.06
WWT-4	DOUBLE SIDED	25/2.80
INS-1	INSERTION TOOL	$3.64

WIRE DISPENSER

- WITH 50' ROLL OF WIRE
- BUILT IN PLUNGER CUTS WIRE
- BUILT IN STRIPPER STRIPES 1"
- REFILLABLE

WD-30 $6.50 WD-30TRI $9.50
Specify Blue, white, Yellow or Red — With 50' of each: Red, Blue and White

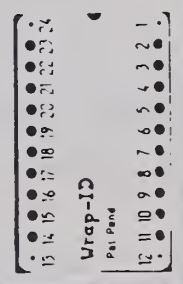


SOCKET-WRAP I.D.™

- SLIPS OVER WIRE WRAP PINS
- IDENTIFIES PIN NUMBERS ON WRAP SIDE OF BOARD
- CAN WRITE ON PLASTIC; SUCH AS IC #

PINS	PART#	PCK. OF	PRICE
8	IDWRAP 08	10	1.95
14	IDWRAP 14	10	1.95
16	IDWRAP 16	10	1.95
18	IDWRAP 18	5	1.95
20	IDWRAP 20	5	1.95
22	IDWRAP 22	5	1.95
24	IDWRAP 24	5	1.95
28	IDWRAP 28	5	1.95
40	IDWRAP 40	5	1.95

PLEASE ORDER BY NUMBER OF PACKAGES (PCK. OF)



WIRE WRAP WIRE

PRECUT AND STRIPPED

Note: 1 inch of insulation is stripped on each end. A 3.5" wire has only 1.5" of insulation.

LENGTH (INCHES)	QUANTITY 100	500	1000
2.5	1.60	4.70	8.20
3	1.60	4.70	8.20
3.5	1.65	5.00	8.90
4	1.75	5.40	9.60
4.5	1.80	5.75	10.30
5	1.85	6.10	11.00
5.5	1.90	6.50	11.75
6	2.00	6.85	12.50
6.5	2.30	7.80	14.30
7	2.40	8.20	15.05
7.5	2.50	8.55	15.85
8	2.60	8.95	16.60
8.5	2.65	9.30	17.40
9	2.70	9.80	18.15
9.5	2.80	10.00	18.95
10	2.90	10.50	19.70

PRECUT ASSORTMENT

IN ASSORTED COLORS $27.50

100ea: 5.5", 6", 6.5", 7"
250ea: 2.5", 4.5", 5"
500ea: .3", 3.5", 4"

SPOOLS

100 feet	$4.30	250 feet	$7.25
500 feet	$13.25	1000 feet	$21.95

Please specify color: Blue, Black, Yellow or Red

TRANSFORMERS

FRAME STYLE

12.6V AC	2 AMP	4.95
12.6V AC CT	2 AMP	5.95
12.6V AC CT	4 AMP	7.95
12.6V AC CT	8 AMP	10.95
25.2V AC CT	2 AMP	7.95

PLUG CASE STYLE

12V AC	250ma	3.95
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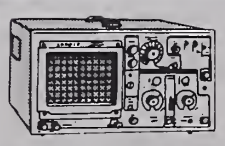

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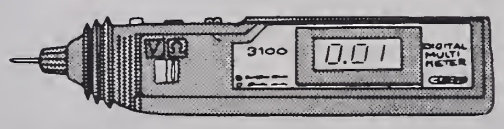

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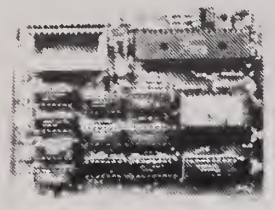

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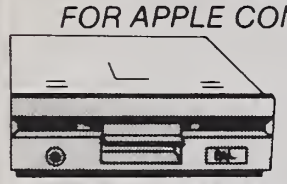

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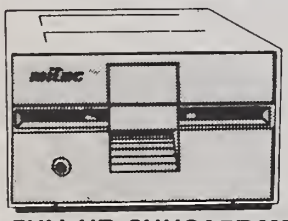

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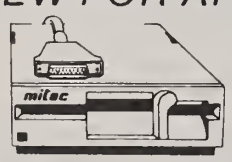

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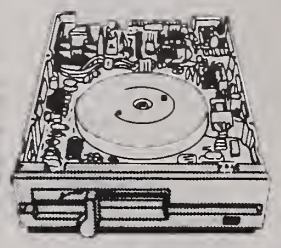

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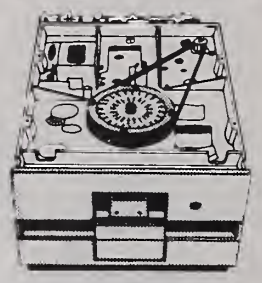

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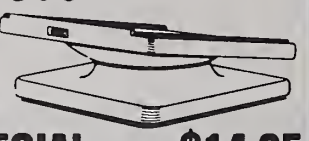

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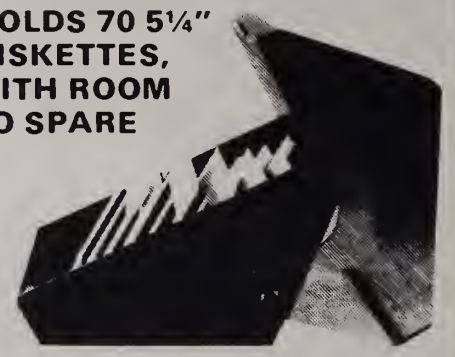

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THE CRACKER SPEAKS

Confessions Of A Computer Criminal

By Don Hamilton and Mike Markowitz

In October, 1983, Bill Landreth, a.k.a. The Cracker, was arrested at his home in Poway, California by the FBI. The Feds took exception to the then-17-year-old Landreth's pastime of illegally accessing GTE's Telenet system and sending messages to his hacker buddies across the country.

Landreth is now the author of a Microsoft Press book, *Out Of The Inner Circle* (reviewed this issue), in which he relates how he got started in the life of "crime," explains hackers and the hacker ethic to the outside world, and suggests measures you can take to keep your system free of intruders.

Last fall Landreth spoke at length to MicroTimes' Don Hamilton and Mike Markowitz on the subject of his adventures. For those of you who missed it last November, we've reprinted selected portions of the interview.

Why don't you give us a little background?

Well, I'm Bill Landreth. On October 13, 1983 I was served with a search warrant by the FBI. They came in and took all of my equipment, which at that time was mainly that Franklin there. They told me that I was being investigated for wire fraud, that I was suspected of being involved in illegal activity using the GTE Telenet computer.

Did they kick down your door?

No, but I'm told that they would have if we hadn't opened it for them — there have been incidents where the mothers of people involved didn't open the door...

Friends of yours?

Yes. One case in Detroit, the person's mother didn't want to open the door and the FBI just broke in the door. I know of another case in your area (Orange County) where they climbed in through a window — they didn't even come to the front door — they just climbed up a water drain pipe and broke in a window — I guess under the pretext that they didn't want to give the hackers a chance to erase anything by knocking on the front door.

How did you find out about the system, by just studying and getting into it?

Well, I had a little help. First, I was given an account, basically like the one you saw, pretty much a public account. Then, through just playing around with the computer, I was able to get one other account.

What kind of account did you create?

On Telemail there are really two kinds of accounts: administrative and user accounts. Telenet gives an administrative account to a company and the company uses it to create other accounts for their users. I just got hold of one of these administrative accounts, and the crime was creating a message system by creating other accounts for friends.

So that's how they were losing, by having these other accounts.

Yes. People all over the country would log on and leave mail. I think we all knew and made it quite clear that Telenet was well able to know that we were communicating and able to read the messages we sent; but like I said, I didn't think we were offending anyone that much, because we're not used to the owners of computers reacting that heavily against us.

What is your field of expertise?

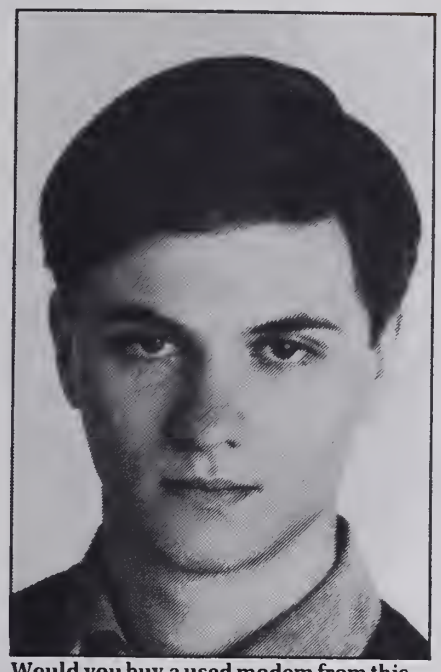
People come to me with problems on VAX's — that was my first computer. Also psychology questions like, "I've got this person...I've got this data on him...What do you think he might have for a password?" I'm better than the average person at figuring out what to try. And I'm more willing to talk to new hackers, so I get a lot of them asking me for advice. I try not to be as elitist as some people.

How did you get VAX training?

By being on one illegally. I've never seen a user's manual, but they've got extensive help files...and then after years of being on computers, you find out the common commands, it's not all that difficult. On Telemail, for example, part of the crime involved creating other accounts. Just by knowing how computers operate, I was able to figure out how to create accounts. They try to make things pretty simple to remember once you learn them. It's not that difficult. That's not where the security is.

Are there some passwords that you run into a lot?

There are three that you find all the time, not necessarily in this order. SECRET, LOVE and SEX. No one ever seems to claim that they've had this password, but you run into it a lot. Also, the single most commonly used password is the person's first name or some variation of it. Along the same line, one of the versions of Hack, Hack (which is trying all permutations) is getting a database which has anywhere from ten



Would you buy a used modem from this man?

to fifty things that you want to try and then plugging in fifty account names and letting the computer try them out. You'd be surprised at how many computers you run into. Anywhere from one in fifty to one in two hundred numbers is a computer — but for a computer dialing, two hundred numbers is only a half hour. It's not that much trouble. There are thousands of computers, and they're throwing themselves at you, you don't have to go searching...

A lot of people worry about computers being addictive. What's your sense of that?

Hard to say. I've been into computers since about 1979, when I was about fourteen. I didn't know anything about computers. I knew that video games were controlled by computers and that's about it. I tried, I'm sure, all the dumb things, to get the computer to do something and found that they didn't work. Within a few months I was writing simple programs, and that's what pulled me in.

Would you say that your knowledge of computers, if you started at fourteen, has helped you with your school work?

It probably would have helped if I'd used it constructively, but I didn't. I neglected school mostly...I was very bored with it.

So school was sort of irrelevant?

Yes. It was to me, because I could learn this stuff at my own pace. I could learn what I considered to be much more important.

What kind of grades did you get?

While I was in one school I still maintained between a B and a C average, but we did move around a lot. I went to three different high schools.

What would you say to a person about to start on the same path you did? Is it a good thing to do — to go out and dodge the FBI?

Well, one thing about hackers that a lot of people don't understand is that being on a large corporate computer is an everyday thing, and the system operators are usually our allies; it's not like they're after us. They're not system operators because it's such a great profession, but because they like computers, and they very likely were hackers before they became system operators.

Was the movie *War Games* a factor in your arrest?

I think there's not much question of it. After the movie *War Games* came out, some people said it informed the FBI, but I assume the FBI knew the state of things without the movie. But it did cause public outcry. "This really is powerful, and these kids really do all this..." They had to put up a show of force.

A second thing, which also may have contributed, is that all these new people with Commodores or whatever wanted to become hackers and they made no secret of it. All of a sudden, where there had been maybe hundreds in the country, there were now thousands. It caused something that's unfortunate, which is an elitism among the people who were around before, which I don't like.

So you think that it is quite a bit of fun, and not that bad if you're careful not to do anything illegal?

For people just starting, I would definitely say, I spent a year at least learning about computers before I even knew about telecommunications.

So that you don't accidentally do something illegal?

Yes. In fact, that's what the 414's (in Wisconsin) did. They decided they wanted to cover their tracks and delete the log files, and they deleted something totally different and caused a lot of trouble.

Inexperienced hackers leave trails all over...

Yes, and don't take precautions...

What kind of precautions?

It depends; very simple things, like not leaving your name, or not using your real name, or the answerback on your computer. There may be some way they can find out the serial number of the program you're using, and track you through that. Just dialing direct can be dangerous if you're worried about being traced. Advanced hackers might pick up the phone and talk a few seconds before they connect to the computer because the phone company doesn't want to touch trying to trace a voice call, because of the legal problems involved, while they might want to trace a data call. □

The NetWorkers

Information Systems And Services For A Changing World

Pioneering comprehensive Macintosh-oriented communications, The NetWorkers are (clockwise from left): Roxane M. Schwabe, vice president of operations; Lewis Guice, founder and president; Lisa, orphan computer; John Zimmerman, vice president of finance

By Ken Goehner

Online services are beginning to emerge from their infancy. In 1970, the first computer-conferencing system was initiated. It was a large, unwieldy affair with bugs and bombs enough to afflict a wide range of mainframes around the country. Use was limited to a small number of scientists, industries, and the government (especially the military). In 1975 the ALTAIR computer was released, an event generally regarded as the start of the Micro revolution. 1977 brought the introduction of the Apple II and the TRS-80. Things got progressively more complex after that. PCs, clones, HPs, Ataris, Commodores, etcetera were introduced to the home market, and in 1984 Apple brought forth the Macintosh.

Modems made it possible for these machines to communicate with mainframes and other micros. With the widespread proliferation of personal computers around the planet, people have been developing new and exciting ways to communicate with each other. BBSs (Bulletin Board Services), LANs (Local Area Networks), news retrieval services, tele-conferencing systems, and a number of variations on these themes are becoming an integral part of the work and home environment. As we move more and more towards an information-based economy, understanding these systems, their applications, and their potential, becomes more important.

These new techniques afford numerous opportunities for the new age entrepreneur. One of the best examples of a totally integrated resource industry is an outfit called The NetWorkers. This company is totally dedicated to support and services for the Apple Macintosh, XL, and Lisa user. They feature an on-line consulting service, on-site consulting (backed by Organizational Software and Intersol), on-site maintenance and referrals to cover other machines, on-line graphics services, product reviews, an on-line ordering service that covers all Macintosh products (delivery within 72 hours at 20 to 30% off list price), customized software (they specialize in business software and are authorities on Omnis products), an electronic mailbox, a tele-conferencing capability, and a Macintosh oriented news service. These services "reside" in a host computer maintained by the Infomedia Corporation of San Bruno, California and run on a format called Notepad, a system generally regarded as one of the most user friendly and secure in the country. The system can be accessed through either Tymnet or Telenet and is available 24 hours a day.

"We started off wanting to put together a consulting firm that was tied together by a network," explains Lewis Guice, president and co-founder of The NetWorkers. "The idea was to have a number of consultants linked together and distribute work that way — by receiving jobs in a central area and then assigning the work around and handling the invoicing and billing. Then I was taking some training down in San Cruz Operations with Kearney Rietmann (now the editor of *Macworld*) and that crowd — I was working for the Computer Connection at the time — and we got to talking about teleconferencing. They asked if we had an on-line service and I said no, but I could create one. And I did.

"The initial idea of MacNet/News was to provide on-line support and on-line consulting as an information utility. It has since grown to handle public domain software and error codes; we'll be selling software over the network, and we have other plans, other directions.

"The essential idea of what we're doing here at The NetWorkers," says Lewis, "is that we're building a giant brain — we're turning the world into one huge multinational economy, a political sphere, and in order to do that we've got to connect everybody. It's taken innovative companies like Apple to set up nerve points or nodes, and it's going to take innovators like The NetWorkers to connect these centers of information and start creating this exchange of knowledge. That's our concept. Now we have to take that concept and make it practical. So we've taken a machine that we believe in — the Macintosh — and a service that's very practical, and apply them. But the underlying principle remains the most important element — we're doing this to finance the next step, which is real-time grassroots global communications and the creation of a true Earth consciousness." □

The NetWorkers Announce An Open On-Line Discussion Of The LISA 7/7 And The Macintosh XL

There are at least 50,000 Lisas and XLs in use around the world. By discontinuing this product line, Apple has left a lot of high-powered orphan machines around the planet. While Apple has promised support for these machines for the next five years, it is obvious that third-party software developers will be looking to greener pastures and that Lisa and XL will go the way of the dinosaur. According to some industry analysts, this may push some Apple users into the hands of IBM, which is precisely where they don't want to be.

Apple itself seems to be in a state of confusion, perhaps due to its rapid growth and its attempt to enter the serious business market. Many Apple users believe that it has become imperative for them, Lisa and XL users in particular, to make their voices heard in terms of what they want from the manufacturer they have dedicated so much time, money and, in several cases, heartfelt loyalty to.

For this reason The NetWorkers is sponsoring a teleconference on the fate of the Lisa and XL. The conference will be moderated by George Por, an internationally known telecommunications expert and co-author of a forthcoming book on Macintosh Telenetworking. The conference will be held on June 19th, starting at 5 pm PDT. Hard copies of the conference will be made available to the general public after June 26th. For more information please call or write: The NetWorkers, 3500 Market Street, #103, San Francisco, CA 94131, (415) 550-1710.

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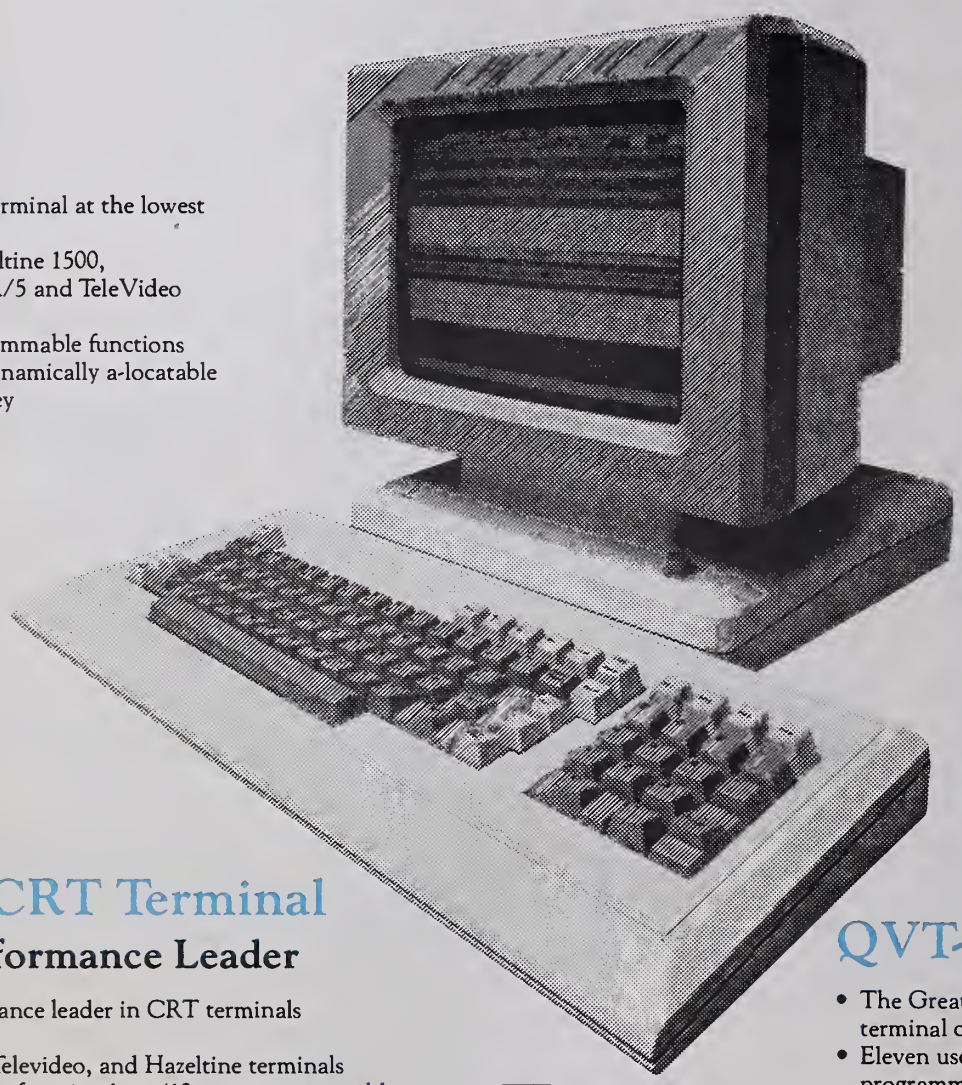

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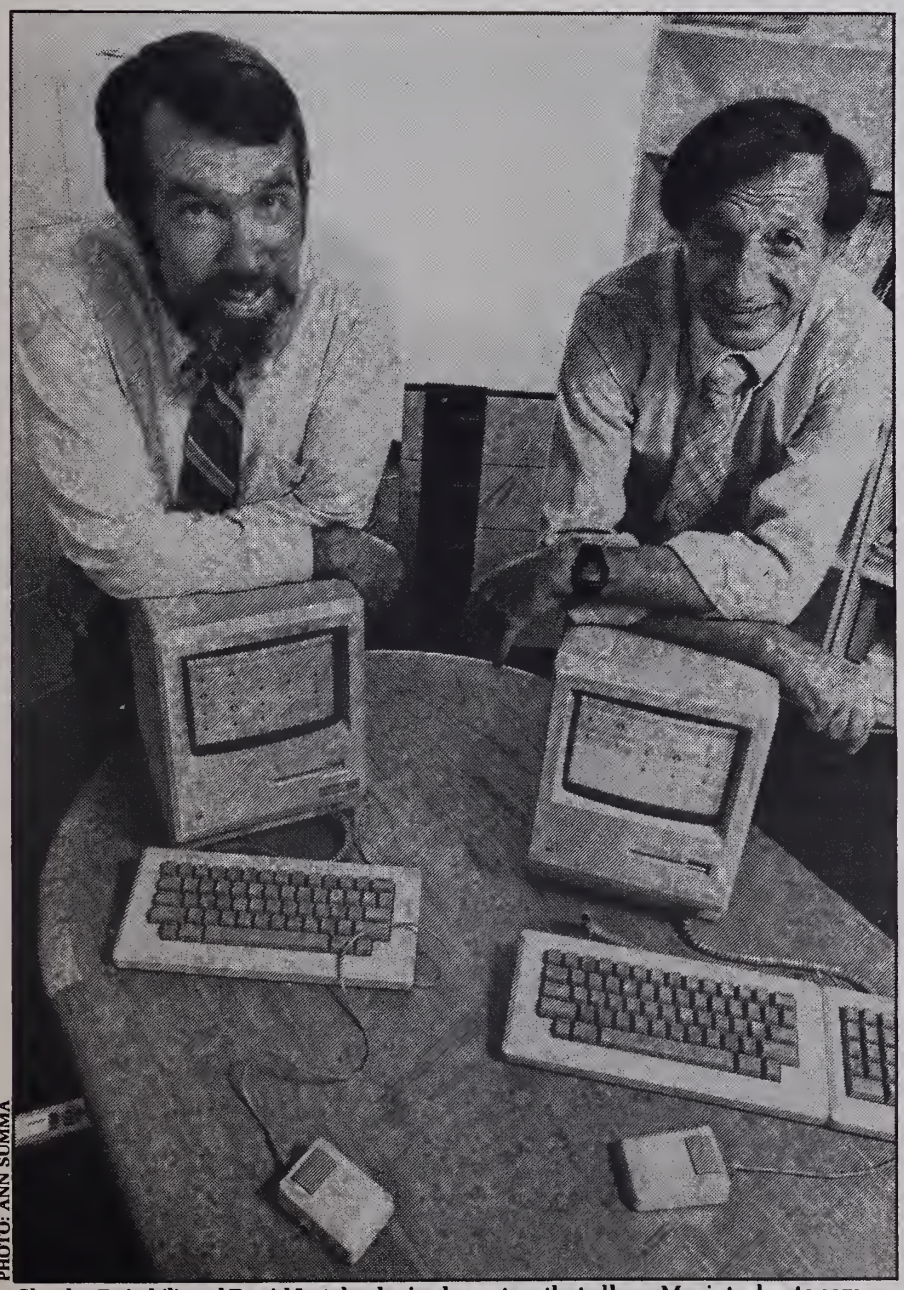


PHOTO: ANN SUMMA

Charles Baird (l) and David Lutzky devised a system that allows Macintoshes to communicate with a Unix operating system, combining the Mac's ease of use with Unix's power and versatility

Linking Unix With The Macintosh Office

By Carter George

With its recent introduction of the AppleTalk network and the LaserWriter laser printer, Apple Computer has begun a concerted effort to sell the Macintosh computer to serious business users. These business users are the same ones who have been flocking to buy IBM PCs for the last two or three years, and they represent a market that Apple covets. The trouble that the Macintosh has faced in breaking into this sector is that it is still regarded by many as more of a toy than a real business tool.

The Unix operating system, on the other hand, faces exactly the opposite problem. No one questions the power or "seriousness" of Unix. Unix is so powerful, in fact, that business has tended to shy away from it because it is supposed to be too hard to learn and too complicated to use.

Enter Lutzky Baird Associates, a small firm based in Los Angeles that has successfully effected the marriage of the Apple Macintosh to the Unix operating system. The result: a multiuser, multitasking office automation environment that is easy to use and offers extremely advanced capabilities and features. Lutzky Baird interfaced the AppleTalk network to a Zilog computer running the Unix operating system. Users of the Macintoshes on the network can use their Macs as standalone computers, or they can use software written by Lutzky Baird to access files and programs on the Unix system.

According to Charles Baird, President of Lutzky Baird, this is all part of a move to recognize the importance of information as a corporate asset. The Macintosh brings users to computing who would never touch an IBM PC, let alone a terminal connected to a Unix system. The combination of Mac and Unix can bring valuable and useful information to employees, especially in management and creative positions, who would not have used it before. "Until now, most companies have evaluated computers by whether they increase the firm's productivity. That is no longer the only reason to buy a computer system," Baird says. Improved communications, a better working environment, and more *creative* productivity are now things that can be expected from computer systems.

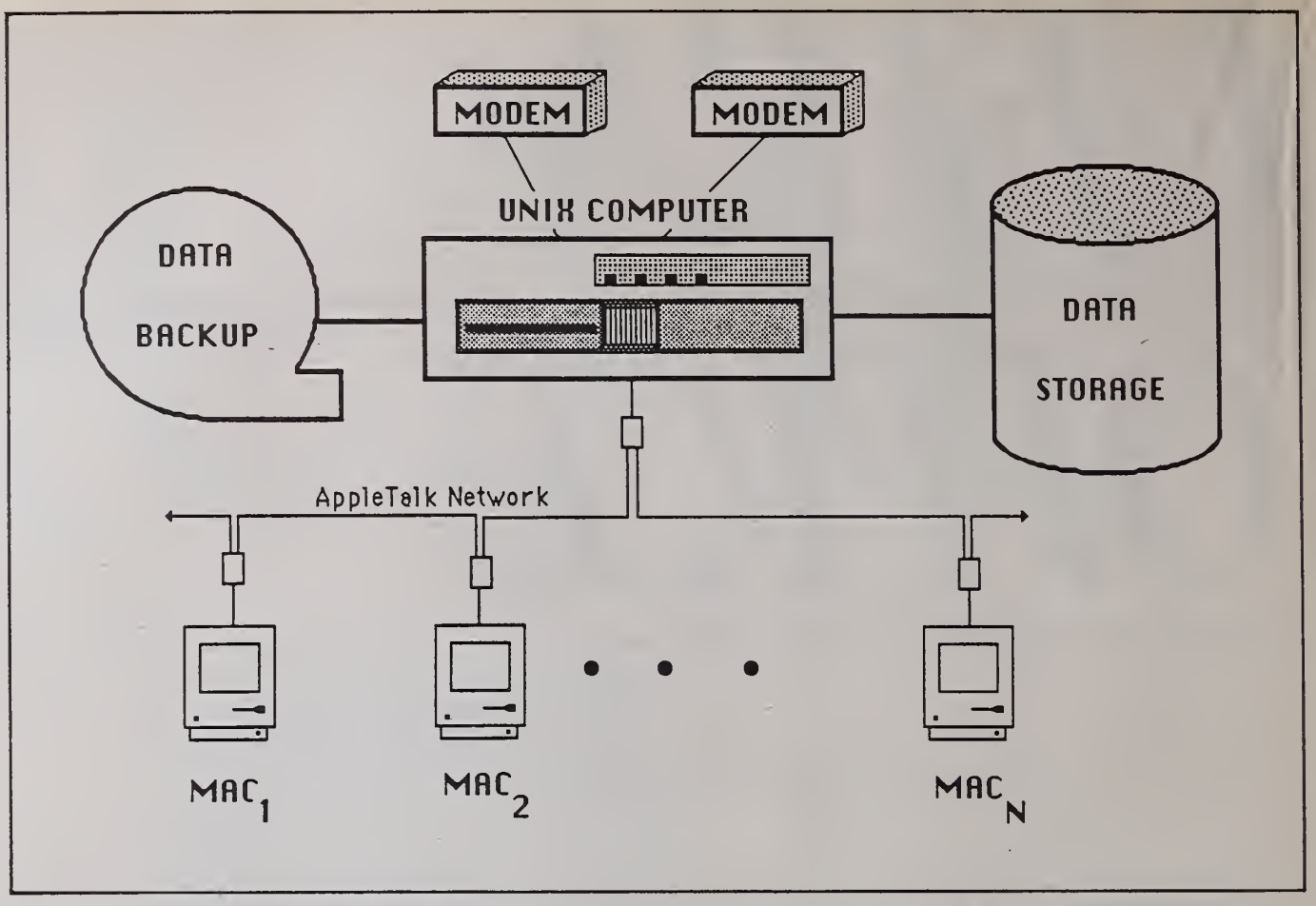
Baird still sees micros as the com-

ing force in the computer world, but in many ways the standalone micro, like the PC and the Mac, has reached the edge of its limitations. Users of standalone micros can't communicate easily, their files can only become so large, and sharing a resource like a laser printer is difficult and slow even with most networks.

Multiuser computers, including Unix systems, address all these problems effectively, but have tended to be too technically complicated for most of the creative and management personnel who represent the main microcomputer marketplace.

This very problem caused Lutzky Baird to develop their product, called the UltraOffice. Originally high-tech aerospace consultants that specialized in satellite communications, Charles Lutzky and Dave Baird received a contract to provide an office automation system for a large ad agency. After an in-depth study (the results of the study fill a hundred-page report) they determined two things: 1) Only a large multiuser computer system would fill all the agency's needs for communications between users and technical sophistication; 2) The only computer the people at the agency would actually use was a Macintosh.

Faced with this situation, Lutzky Baird had two choices: sell the agency a multiuser system that met their requirements but that no one would use, or sell them dozens of Macintoshes that wouldn't let their employees communicate effectively and wouldn't let them develop some of the large database files they needed. Lutzky Baird took choice number three: develop a system from scratch that offered the best of both worlds. Says Baird, "You can't give busy people a system where they have to learn to do everything A, B, C, D. They don't have time to learn it, they won't do it." Systems today have to do what the users want and the users have to want to do them. The result is the UltraOffice.



UltraOffice system using a single Unix computer. The number of Macs that can be connected to a single Unix computer depends on the size of the Unix machine and the amount of activity performed on the Macs.

Says Baird, "You can't give busy people a system where they have to learn to do everything A, B, C, D. They won't have time to learn it, they won't do it."

In its first release, the UltraOffice lets Macintosh users send mail to one another and gives the AppleTalk network anywhere from 50 to 640 Megabytes of hard disk storage for files, depending on which of the Zilog/Unix systems is used. More sophisticated users, salty old programmers for example, can still access the Unix system directly using the Macintosh as a terminal.

The interface between the AppleTalk network and the Unix system is accomplished with a combination of both hardware and software. An intelligent communications board available from Zilog has been tailored to provide the hardware connection from the Zilog Unix system to the AppleTalk network. The board actually uses the same Zilog chip used by Apple in their network, and allows high-speed communication between the Zilog Unix system and several Macintoshes simultaneously. Software written by Lutzky, Baird, and Lutzky Baird technical whiz Dick Winge, implements the necessary communications protocols that allow the Unix system to communicate with the Macintoshes on the AppleTalk network.

At the Macintosh end, UltraOffice offers all of the visual appeal of the best Macintosh programs. It uses icons and pull-down menus in the same way that, say, *MacWrite* and *MacPaint* do. It is easy for anyone to learn, and for someone who has already had some experience on a Macintosh, would require little or no time to master. If you have ever used Unix, the first thing you will notice about UltraOffice is how it lets you browse through the Unix Directory system.

Each Macintosh user has a set of directories in his or her "library." There is an additional set of Unix directories in a public library, accessible by anyone on the AppleTalk network. When you list the contents of a directory in your library, all of your files are shown graphically on the Macintosh's bit-mapped screen. Subdirectories show up as large arrows pointing down, parent directories as arrows pointing up. To move to such a directory, all you do is move the Apple mouse to the arrow and click.

If you want to work on a file that is in a particular directory, you check it out. Files can be checked out "read only" or with complete access. Only one user can check out a file with complete access at a time, minimizing confusion. An unlimited number of users can check out "read only" copies of a file, even if someone else has checked out the file with complete permission to alter it.

Macintosh users can store files on the Unix system in their own library or in the public library. (These files are then stored as Unix files on the hard disk of the Unix system.) Retrieving a file from any of the libraries occurs in about the same amount of time it takes to read a file from the Mac floppy drive.

The other main feature included in the first release of UltraOffice is an electronic mail facility. The mail package lets any Mac user on the network send any number of messages to any other user. If you have received mail, UltraOffice sends you a message. You can look at a summary list of the mail waiting for your attention. You can read mail, forward it to other users, delete mail, or save it in a library or on the Mac floppy disk.

One limitation to the electronic mail facility in the current release is that mail cannot be sent to users who are logged in on traditional terminals

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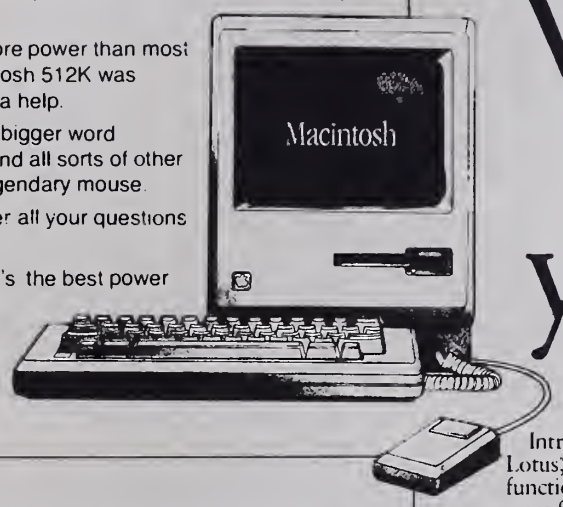

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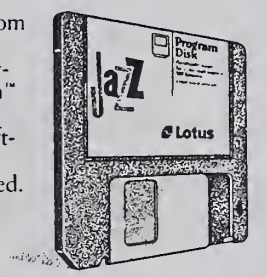

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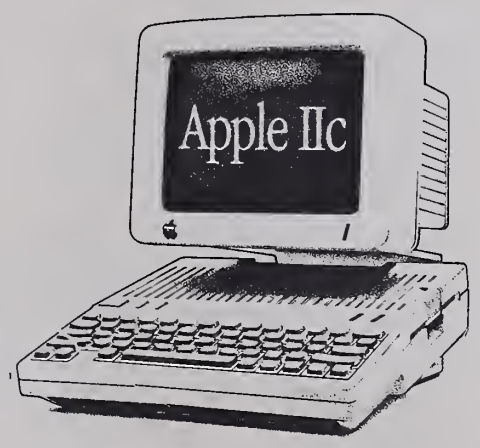

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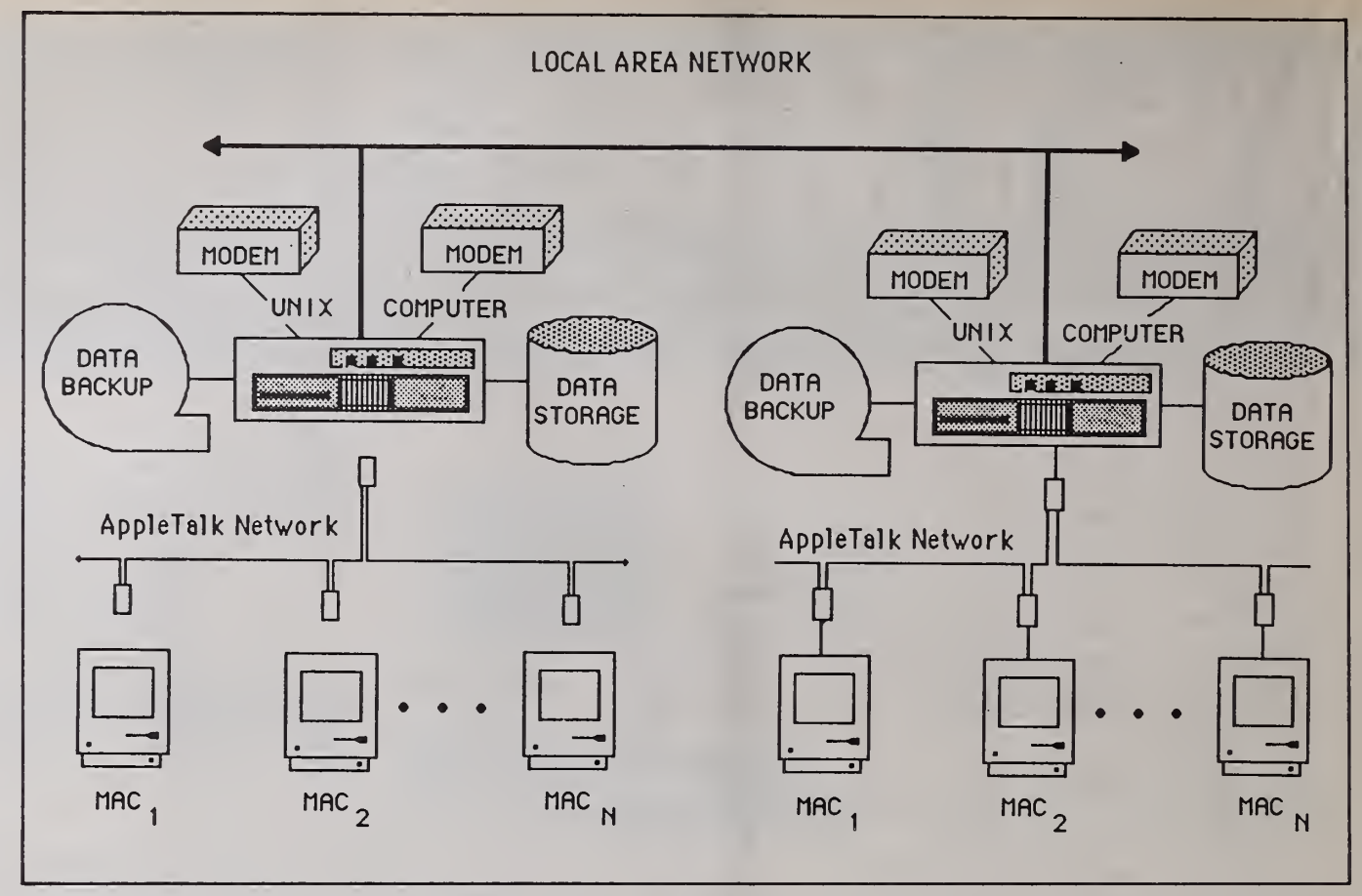
as normal Unix users. Of course, Unix has its own very similar mail package that Unix users can use to communicate amongst themselves. At present, though, there is no way for Mac users on the network to communicate with traditional Unix users.

The second release of UltraOffice should solve this problem as well as add several significant new features. It will be available to owners of the first release as an upgrade included in the original purchase price.

In the second release, slated for the fall, the UltraOffice will include a spooling feature for the LaserWriter. This will mean that all requests to print files on the Apple laser printer will be copied to the Unix system and sent to the LaserWriter from there. The laser printer will no longer be attached to the AppleTalk network. Instead it will be connected to a standard serial port on the Unix system, allowing it to be accessed by custom Unix applications, as well as Macintosh programs like *MacPaint* and Aldus' new typesetting system *PageMaker*.

With the Unix system used as a spooler, no Macintoshes will have to wait for a print job to finish for work to proceed. Currently on an AppleTalk network without UltraOffice, the laser printer can cause several Macintoshes to have to wait. When a laser printing job is submitted, the Mac that submitted it must wait until it is done. If other users submitted print jobs before yours, you will have to wait until their jobs are done first, and then wait while your job is printed.



For systems too large to be supported by a single Unix computer, a local area network connecting multiple Unix computers provides high speed communications between computers located within approximately one-half mile of each other.

An unlimited number of users can check out "read only" copies of a file, even if someone else has checked out the file with complete permission to alter it.

The next release will also include the ability to execute more Unix commands, to send mail to Unix users, PC users, and other remote systems, and to network several Unix systems together.

The biggest feature of the second release, however, will be the way in which it works with Apple's soon-to-be-announced "Switcher." The Switcher is a program that allows several programs to be in memory at once. The Mac user can then switch from one to another almost instantaneously without having to wait for the program to load from disk.

The UltraOffice will be one of the programs that the Switcher allows to be always in memory. When this happens, UltraOffice will make the Unix hard disk appear as the system disk for the Macintosh. The floppy disk drive on the Mac will not be needed except to make copies of files. The Macintosh will then behave as if it were a true hard disk system, with almost no restriction on file size.

Lutzky and Baird see this as an incentive to third-party software and developers. "The most obvious application is database processing," points out Baird. A database could offload all of its screen processing and user interface to a process that runs on the Mac, he explains, while the Unix system would contain the actual data. This would mean that the data could be shared by all of the users of the network, and that the Unix system would have more processing resources free to be able to dedicate to rapid storing and retrieval of data.

The second release UltraOffice may seem like a pipe dream, but most of these features are already working in the ad agency that started the whole project. The agency is letting its offices be used as a master test site for the UltraOffice. In this site there are now almost 300 Macintoshes linked in a single network, using UltraOffice and Zilog/Unix systems.

Up to 40 Macintoshes can be linked to a single Zilog Model 32. Then, any number of Zilogs can be linked together using a high-speed Ethernet connection. All of the Ethernet networking of Unix systems is transparent to the Mac user: from UltraOffice it all looks like one huge file system.

Currently, the UltraOffice runs only on Macintoshes with 512K RAM and on Zilog's Models 12, 22, and 32 Unix systems. Lutzky Baird chose Zilog because it consistently benchmarked as the fastest small Unix system (the systems range in price from $19,000 to around $60,000 for a Model 32 with 500 Megabytes of hard disk storage). The company does have plans to include other Unix systems in its line-up, but no decisions have been made yet. The UltraOffice itself costs $2,000 per Unix system (including both hardware and software) and $300 per Macintosh. Also necessary is the AppleTalk network, available from Apple for $50 a connection.

For an 8 user system, based on a Zilog Model 12 with a 50 Mb disk drive and 8 Fat Macs, this adds up to about $50,000, including the AppleWriter laser printer and the necessary AppleTalk network connections. It is true that this is more than, say, 8 IBM PC/XT's. However, if one adds in the cost of networking it is not *that* much more, and the scope of capabilities is really in a different league altogether. It could well be that the success of the UltraOffice, and of products like it, will determine the fate of both Unix and Apple in the attempt to find an alternative to IBM in the corporate computing world. (Information about Lutzky Baird can be obtained by writing Lutzky Baird Associates, 5601 Slauson Ave., Suite 222, Culver City, CA 90230. Information about Zilog Unix-based computer systems is available from BASIS, 1700 Shattuck, Suite 1, Berkeley, CA 94707. BASIS also carries the Lutzky Baird UltraOffice.) □

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Talk To Your PC With Pronounce

New Speech-Input System Lets You Perform Common Functions By Voice

PHOTO: PAT JOHNSON STUDIOS

Ken Greenberg demonstrates the process of defining voice commands via keyboard. Once the system is trained to your voice, you may never have to use the keyboard for common functions again.

By Mary Eisenhart

"Listen," says Ken Greenberg. The IBM PC beeps cooperatively. "Wordstar," he says. Again the machine beeps, spends a few seconds loading the program, then shows the *WordStar* screen display. "Take a memo," says Greenberg, and the display changes to a preset memo format. In response to several other short commands, the computer sets up a memo to a specific customer, using preset blocks of text.

"Quit Wordstar," Greenberg continues, having finished the memo. "Load 123." The Lotus display appears onscreen. "Sales forecast," Greenberg says, and a chart appears. "January [beep]. Seven [beep]. Thousand [beep]. August [beep]. Zero [beep]. Enter [beep]. Total [beep]." Add column [beep]." Having made the necessary changes in the forecast, he tells the computer "Goodbye," whereupon it beeps once more — and stops listening.

We're in the offices of Delta Information Systems, a San Francisco value-added reseller specializing in user-friendly products for the PC. Greenberg is demonstrating *Pronounce*, a speech-input package for which Delta is the exclusive Northern California distributor. Manufactured by MicroPhonics Technology of Renton, Washington, *Pronounce* consists of a headset, a circuit board that plugs into the PC and a software disk; priced at $595, it is likely to dramatically improve the accessibility of current technology to those whose disabilities range from physical handicaps to sheer computer terror.

Currently available for the IBM PC and its compatibles, *Pronounce* can be used to run virtually any MS-DOS program; it requires a memory of at least 256K. It allows the user to preset (via speech and the keyboard) the meaning of spoken commands, and stores the vocabulary on disk, a procedure which can result in considerable time-saving, since each spoken command in the vocabulary can substitute for up to 255 keystrokes. "View the graph" in *1-2-3*, for instance, substitutes for "⟨Esc⟩ ⟨Esc⟩ ⟨Esc⟩ / GA ⟨TD01⟩ ⟨enter⟩ B ⟨TD01⟩ ⟨enter⟩ C ⟨TD01⟩ ⟨enter⟩ V." Each vocabulary can contain up to 128 commands, and each user can define his or her own vocabulary and store it; according to tastes of the individuals involved, "Load 1-2-3," "Start Lotus," or even "Death to Spreadsheets" can all have the effect of loading *Lotus 1-2-3*.

For those who use several types of application software and are constantly moving back and forth from program to program, the same command can be defined as having the same function in each application; thus, "print" will produce the same result whether you happen, at the moment, to be using *Multiplan*, *WordStar*, or *PFS File*. "Customer's name" can be defined as "Jane Doe" for filing, billing, and correspondence purposes.

Pronounce allows the user to preset the meaning of spoken commands, and stores the resulting vocabulary on disk, a procedure which can result in considerable time-saving.

This is all very well, some might say, but sooner or later any voice recognition device is going to have to deal with the fact that most people's voices vary considerably. If you don't sound human till after noon, if you've got such a bad cold you can hardly talk, if you're under a lot of pressure and your voice just rose several octaves, it's quite possible that *Pronounce* won't recognize your voice's current incarnation as the sound it knows and loves. Not to worry. The system deals with the problem in a fairly hassle-free manner. You simply exit (via keyboard if necessary) from the point of impasse, choose the "define" function from the *Pronounce* menu, and "retrain" the system to your voice. This process involves speaking the command and keyboarding in the spoken command's definition. You can then return to your application and resume your work where you left off. (Since *Pronounce* allows vocabularies of up to 128 commands, which is far more than most users ordinarily need, some may find it useful to train the system to recognize the same person's command under different conditions. Thus, while *Pronounce* might not respond to a user's 7 am voice at noon, it will continue to search its vocabulary for a match until all 128 commands are exhausted.)

Though *Pronounce* doesn't entirely eliminate the need for a keyboard, its flexibility and sizeable vocabulary enable the user to bypass boilerplates and other repetitive keyboarding tasks and accomplish the same functions more efficiently by voice. It is also something of a godsend for those whose physical disabilities have prevented them from making full use of computer technology. One of Delta's clients, according to Greenberg, is a quadriplegic programmer who's exploring

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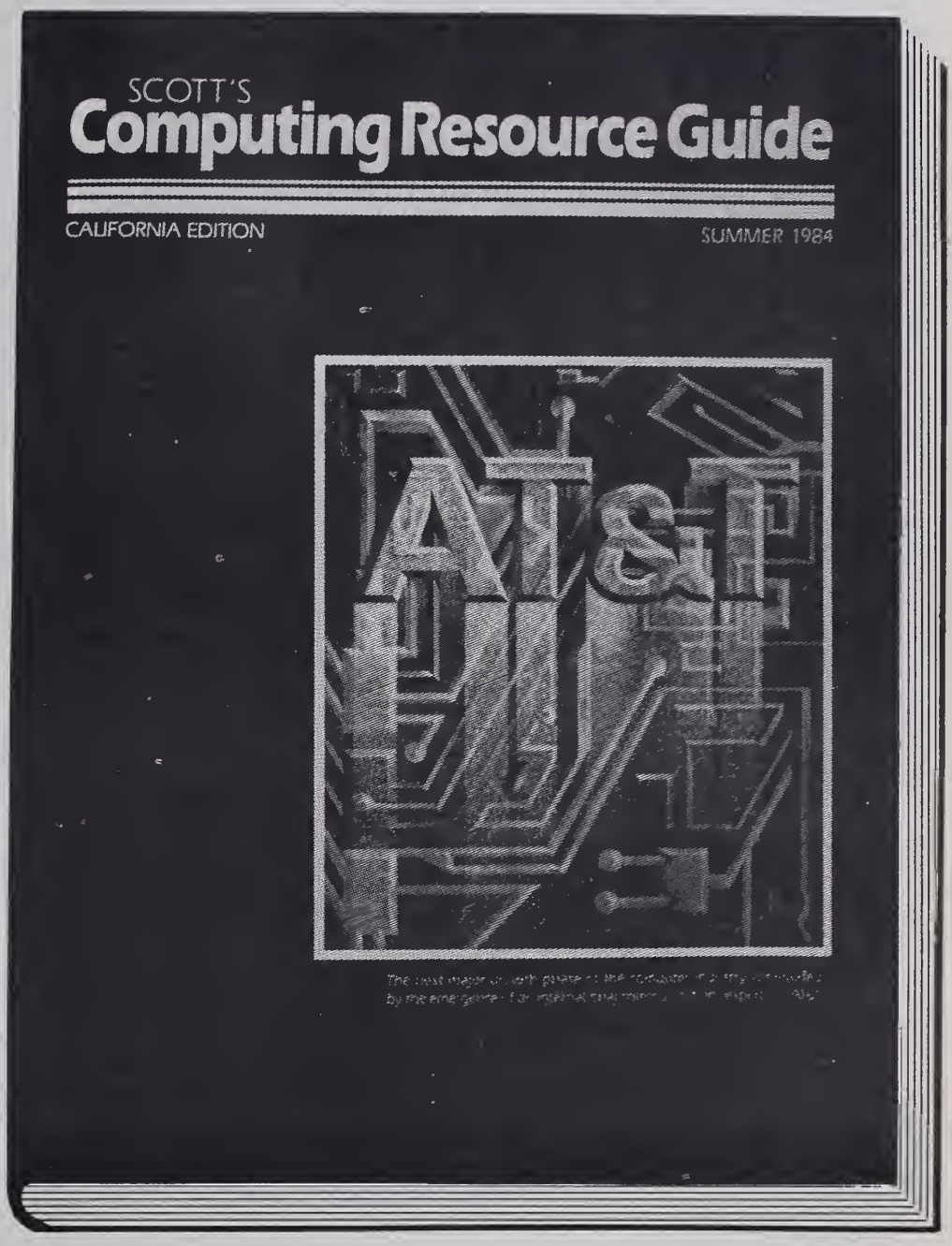

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the possibility of combining Pronounce with a home security device in order to turn lights and appliances in his house on and off, using voice alone; he's also experimenting with Pronounce as a programming and dictation tool (being restricted to a vocabulary of 128 commands, Pronounce is far from being able to take a letter using conventional forms of dictation. However, it can take dictation character by character, and assigning a voice command to each character on the keyboard would still leave plenty of vocabulary available).

While Pronounce is obviously useful to the disabled, a host of other uses are immediately apparent, from games to factory quality control to scorekeeping at sports events. Generally, Pronounce is helpful in any situation when the user needs to keep his or her hands free of a keyboard, or needs to keep an eye on some activity in progress, be it a game or a graph on the screen. MicroPhonics is also currently working with Boeing on a voice-controlled cockpit command system for aircraft.

Pronounce is also effective in dealing with that recurrent problem of the computer age — lack of expertise. Using Pronounce, application software programs can be made accessible to users who are quite unfamiliar to them. "For instance," says Delta vice-president Barry Krasner, "a secretary using WordStar who doesn't know that in order to save a file she has to say 'Control K S' — she can just say 'Save.' She has to be involved in the training of the machine to her voice, but not in the vocabulary and the meanings of the keystrokes."

All of which often has the added benefit of reducing the time and expense of training to a minimum. As Delta president Tony Diamantidis puts it, "I am handicapped when my secretary quits on me, and I have to find another secretary. And she doesn't know WordStar from bananas. If I had her set up so that all she would have to say is 'Take a memo,' the training associated with WordStar is reduced to nothing. For every software product that is ever going to be used, in any aspect of business, that training factor, the knowledge problem that we are experiencing, is reduced substantially."

Pronounce brings the user closer to the point of dealing with the machine like a human being.

Likewise the cost of doing business internationally — though 1-2-3 is in English, with a predefined Pronounce vocabulary it will respond equally well to commands spoken in French, Japanese, or Swahili.

As more and more computer customers, particularly in the business community, are discovering, all the high-tech devices in the world aren't much good if they aren't easily accessible to their prospective users. Many a company has invested mega-dollars in a system, only to find employees regarding it with fear and loathing. While the technology is still far from the point where a computer is as easy to use as a can opener, Pronounce at least brings the user closer to the point of dealing with the machine like a human being. □

Delta Information Systems

Bridging The Gap Between Man & Machine

PHOTO: PAT JOHNSON STUDIOS

Barry Krasner (l) and Tony Diamantidis founded Delta Information Service to make ease of use a reality

Befriending human and computer is the guiding principle of Delta Information Systems in San Francisco. "The term is 'value-added resellers,'" quips president and co-founder Tony Diamantidis, "but I call it 'Ghostbusters.' The ghost that we're busting is the fear, this mystery that is blocking the way between man and machine. We are in the business of evaluating and promoting such hardware and software, primarily associated with IBM PCs and compatibles, as can truly help develop the ease-of-use concept."

Diamantidis and his partner Barry Krasner perceive the ease-of-use concept as integral to their operation, having noticed early on that there was a big gap between what products promised and what they delivered, and that a relatively small number of users was able to get the full benefit of computer technology. Both men were originally consultants, and met at the office of a client. In 1982 they decided to go into business for themselves. "We started as a service organization — most of our work was designed around doing computer work for school districts. And as we saw the needs changing, we shifted to focusing on micros," says Diamantidis.

"One of the reasons we decided to get into this," continues Krasner, "was that when we first started investigating microcomputers for our own use, I did a lot of reading up on it. I'd go into a store and say, 'I have a question about this hard disk' — or something — and they'd say, 'Well, can't help you there, but here's a package called *1-2-3!*' It was really frustrating."

Having discovered that there was a considerable market for user support, the partners began seeking out and evaluating products. In the process they came to another realization — there were a lot of good products out there whose creators had very little notion of how to market them. "They thought that because they had created this fabulous thing, the world should come crying to them," sighs Diamantidis. "Well, that's not quite how life is. The fit that I saw for our company was of our ability to evaluate and determine what were the better products, which we would then promote and let the world reap the fruit of some good hard work of some very good people."

The products are chosen after a comprehensive evaluation process. Both partners spend considerable time reading trade publications and new product announcements, looking for things "that fit with our mentality of where the industry should be going," says Diamantidis. "To see if what was preached is actually true," he continues, Delta then solicits evaluation units of each product and subjects them to rigorous testing.

"We've been around the industry long enough to know what are the common things, how to do things — and I'll see something that will make it easier. Then I'll say 'Let's take a look at this,'" says Krasner. "But then Tony's the devil's advocate — 'Yes, but is it really practical, or is it just a toy?'"

"In voice recognition, for instance," Diamantidis elaborates, "we had three vendors come in. The one we selected, we selected because its range was far wider than any other, it was not limited to 10 words, its level of recognition was significantly greater than the others, and its price was not as prohibitive as some of the others."

Another factor in Delta's choice of the products it markets is the willingness of the manufacturer to work with the dealers — providing support and access to information — to assure customer satisfaction. The way the partners see it, if they sell a client a product and the client has problems, he or she should be able to get all necessary support from Delta. Diamantidis adds, "The moment you go home, you should have learned everything there is to know about the product and its use, as far as it applies to your need. Our focus is adding value through service: providing the training, the expertise, and especially a phone that someone can call."

In addition to Pronounce, Delta carries other products for ease and efficiency of computer use. A recent acquisition is *Clipper*, a compiler that allows *dBase III* to run 2 to 20 times faster, considerably enhancing the program's efficiency. Delta welcomes inquiries — from clients, prospective product dealers, and from creators of products that make computer use more accessible. (Delta Information Systems, 150 Chestnut St., San Francisco, CA 94111. (415) 362-6663/(800)325-9675.) □

— Mary Eisenhart

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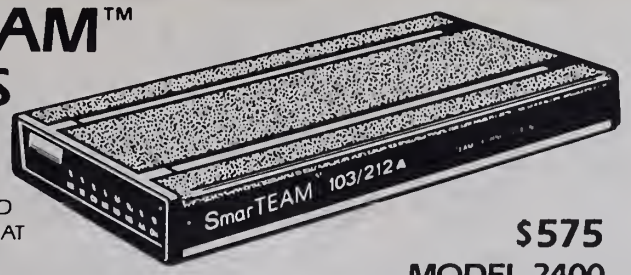

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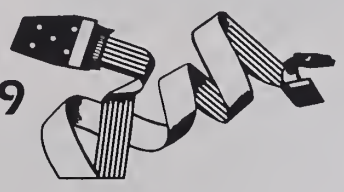

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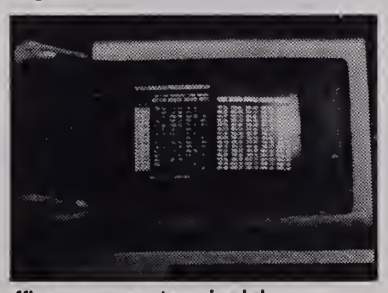

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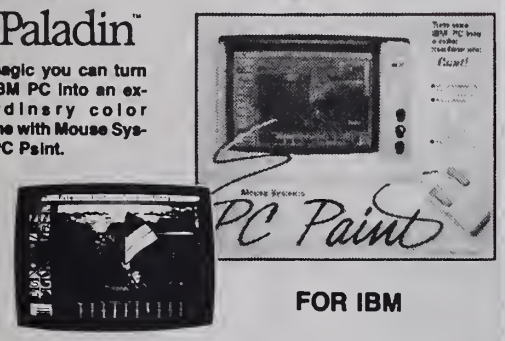

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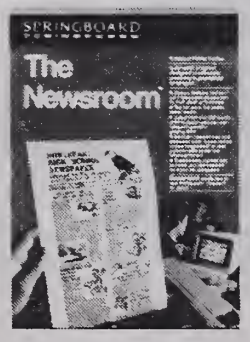

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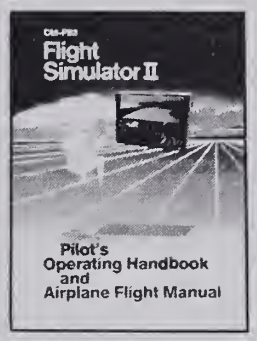

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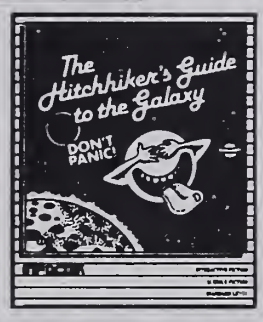

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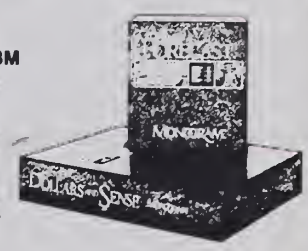

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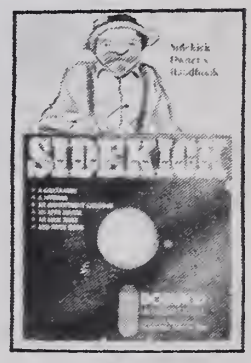

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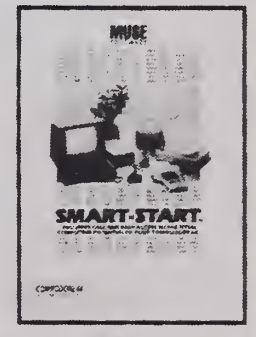

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Meter Readers Join The Micro Revolution

By Robin J. Dunitz

Pamela Gibson's new computer got an unexpected test its first day on the job, when a pit bull grabbed it right out of her hand. In spite of a few teeth marks, the 2½-pound Data Cap H worked fine when she finally got it back.

Southern California Edison's (SCE) employees consider the durability of the new machine as one of its best qualities. According to meter reader Denice McCreary, "When it rained, documents used to get wet. With Data Cap you don't have to worry; its being waterproof saves a lot of hassle." Company management, on the other hand, is especially pleased at how quickly the system has improved accuracy and reduced costs.

As of April 5th, all of SCE's 638 meter readers within the utility's 50,000-square-mile service area have been trained and are now using one of the $3,000 computers. Implementation of the system began in July, 1984, after a three month pilot program in Ontario, about 30 miles east of Los Angeles. Edison serves all or parts of 17 counties in Central and Southern California.

In shape the Data Cap resembles a heavy duty telephone receiver more than a portable computer, measuring 10.6 by 3.5 inches. It can either be held in one hand or hung from a waist or shoulder strap. Its membrane keyboard has 56 keys, most of which have at least two uses. With its many special function keys, it is easy to call up information like what side of a house the meter is on and whether to expect a dog. Other keys enable the user to enter such unusual conditions as a vacant house or a meter's broken seal. In another mode it is possible to write a message of up to 81 characters. Searching, while slow, can help locate an address or name out of sequence.

The Data Cap's liquid crystal display has two lines of 16 characters each. The unit uses rechargeable nickel cadmium batteries, which are recharged each night in one of SCE's 34 district offices.

The new portable replaces a handwritten system in which meter readings were recorded on cards and paper forms. These were then optically scanned by an in-house computer. The papers were easily damaged by bad weather, and, unless marked at just the right spot, could be misread.

PHOTO: ROBIN J. DUNITZ

Denice McCreary reads an SCE customer's meter and enters the reading on her Data Cap H computer.

Now, with the new Data Cap system, in the morning each meter reader picks up a microcassette tape (or more than one, depending on the size of the route), programmed with their route for the day. The tapes are created at one of 66 work stations, which are called Data Management Centers (DMC) and are located in SCE district offices. Each DMC consists of a dumb terminal and two to four cassette tape drives, and is connected by modem to one of SCE's six minicomputers. These IBM Series 1 minis, located at the company's headquarters in Rosemead, store the electricity records of the utility's 3.4 million customers. At the end of the day the meter readers turn in their tapes, now having all the meter figures on them, and the information is uploaded through a DMC back to one of the minis.

Each cassette tape can hold about 200 accounts, having 160K of memory. The Data Cap itself uses an 8-bit, RCA 1802 microprocessor. Its custom-written language is called EDL (Event-Driven Language), and is a low-level assembly-type language. The actual coding was done in Forth.

Southern California Edison is the largest customer of Spokane, Washington-based Itron Inc., which developed the Data Cap H specifically for SCE, including both the hardware and software. SCE paid Itron $3.5 million for its new system. For the past seven years Itron has provided portable computer equipment exclusively for utilities throughout North America. The company now has over 50 clients.

According to Mike Stephens, Supervisor of SCE's Customer Service Systems, the company was almost immediately impressed by the "dramatic impact in reducing errors and costs." Meter reading accuracy is now close to 100% because the Data Cap requires a second reading if the first is outside a customer's usual range. This simple verification tool has meant a 40% decrease in the need for follow-up meter visits. Not surprisingly, the related cost savings have been significant.

While meter reader Denice McCreary appreciates the Data Cap's help in catching errors, and the way it enables her to make changes when they're "still fresh on my mind," her overall support is somewhat qualified.

Denice feels Data Cap saves other company employees, like those in accounting, more time than it does the meter reader, due to the slow speed at which the portable carries out certain functions. For example, some long routes require more than a single cassette tape, and that can mean stopping to change a tape while in someone's backyard. Often either the resident wonders why you're standing there so long, or a dog has more time to cause trouble.

Another problem, bad batteries, seems to have been mainly corrected. When Denice was being trained, she had the chance to take a Data Cap home in order to practice with it. She didn't get much chance as the unit's battery failed almost as soon as she turned it on. "Sometimes a battery fails in mid-route, and you have to come back to the office for a new one," she says.

If you're a customer of Southern California Edison, be sure to ask your meter reader to show you the Data Cap. Now that they're used to it, there's a good chance that they enjoy being a part of the micro revolution. □

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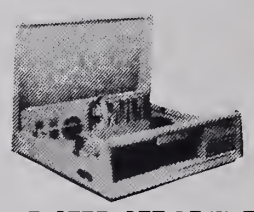

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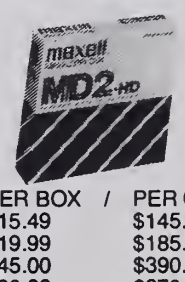

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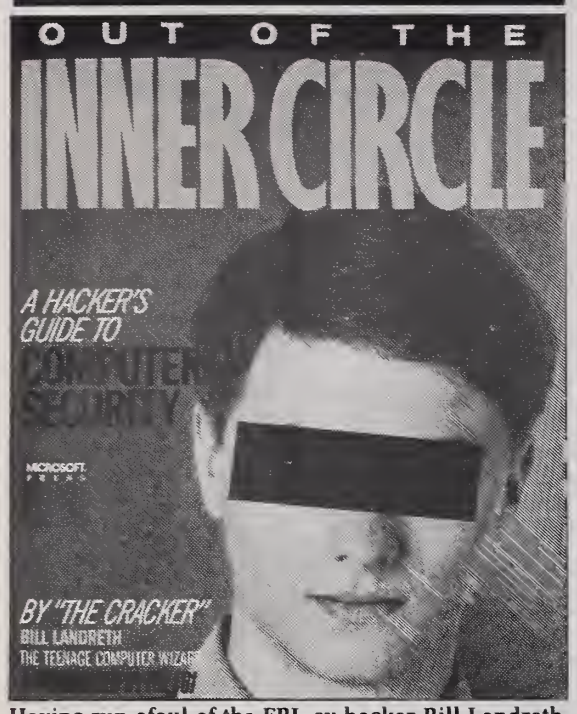

Having run afoul of the FBI, ex-hacker Bill Landreth relates his adventures and tells what you can do to keep his compatriots out of your system

Out Of The Inner Circle

A Hacker's Guide To Computer Security

By: *"The Cracker" Bill Landreth, with Howard Rheingold*
Published by: *Microsoft Press, Bellevue, WA*
List price: $9.95
Reviewed by: *Mike Markowitz*

The words on the cover call this a "Guide To Computer Security," but in fact Bill Landreth's new book is an account of a lost world: the brief moment in history when corporate mainframe computers and the telephone network were the playground of an elite underground of "hackers." Advances in the state of the art, and a growing obsession with computer security (symbolized by the regrettable movie *Wargames*) may soon lead to the extinction of the hacker, so we are lucky to have a chronicler who was so close to the action, and who writes so fluently.

"The only way in which I am really different from most people," he reflects, "is in my fascination with the ways and means of learning about computers that don't belong to me."

MicroTimes readers may recall our October, 1984 interview with 19-year-old Landreth, who lives with his family in Poway in San Diego county. On October 13, 1983 his computer equipment was seized by the FBI as evidence in an investigation of illegal use of the GTE Telemail system. Along with other members of the Inner Circle, a group of high-level hackers, he had used unauthorized administrative accounts on this network to create a private bulletin board system. The case and its happy outcome are described in an Epilogue. Most of the book, however, is written as advice to the system operator or management information system bureaucrat who needs to understand the hacker phenomenon. Of course, the novice hacker will find a wealth of ideas here for gaining access to unprotected or carelessly defended computers.

The book opens with a dramatic account of an electronic battle of wits between a skillful hacker and the system operators at "MegaCar International." Landreth recounts his own first steps in hacking—the discovery of the "magic door":

> I didn't acquire a dumb terminal because I wanted to break into big computers. In fact, the situation was exactly the reverse: A friend loaned me the terminal and in the process of finding out what to do with it, I discovered the world of minis and mainframes.

An historical flashback traces the origins of hacking to the first computer time-sharing systems at MIT, and the phone phreaks of the late '60s, such as the legendary Cap'n Crunch. A short, lucid chapter explains the basic concepts of an operating system, communications networks and levels of security. Several chapters explore the psychology and motivations of the hacker, and develop a typology of profiles: The Novice, who is 12 to 14 years old and just playing; The Student, driven by eagerness to explore a system in depth, who may feel that he can learn more in a day of marathon hacking than in an entire year of school; The Tourist, who loves the challenge of penetrating as many different systems as possible; The Crasher, who simply wants to make trouble by erasing data, scrambling files or bringing down a system; and finally, The Thief, a criminal motivated by personal gain. The Thief is not really a hacker at all, but the threat he poses to vital data may encourage paranoia about the more innocent activities of harmless hackers. Landreth describes a kind of ethical code, the Bushido of the true hacker Samurai: (1) never delete or damage information that belongs to a legitimate user, (2) never leave another hacker's name or phone number on a system, (3) never exist as a parasite on the finding of other hackers, but always strive to obtain and contribute fresh accounts and access information. The discussion of passwords, by itself, is well worth the price of the book. "The Cracker" was considered an expert in the arcane art of guessing the password. All too many accounts, he observes, are protected by trivial, obvious passwords like SECRET, LOVE and SEX, or the user's first name.

The technical aspects of penetrating a computer system are described in fascinating detail. For example, consider the tactic called "the decoy":

> When I left my original, low-level account open, I also left this program running. When the next call came into the system on my "open" phone line, my decoy program displayed for the caller all of the "hello, please log on" messages that the operating system would normally display. The difference was, my program stored the caller's account and password information in a special file I had set up in the host system.

Another tactic is the "Trojan horse," a file designed to attract the curiosity of other users who will want to access the program, just to find out what it does. When the victim runs the program, it displays some silly message, while unobtrusively reading the user's memory locations to steal his or her password, or perform some other high-security task.

A more advanced strategy involves "fooling" the computer into thinking the intruder's remote terminal is actually the system operator. If successful, this ploy gives the hacker the ability to assign passwords, create accounts, erase files, and even lock out the legitimate system operator.

The best hackers constantly try to "think like a user," so Landreth emphasizes that the system operator who wants to defend his computer from intrusion must learn to "think like a hacker." Since a clumsy or naive hacker will leave tracks, it is also important to educate users to be alert to signs of tampering, intrusion or mischief.

What makes a particular system attractive to hackers? Some key factors are: computers with many users, high-visibility corporations, friendly operators (many were hackers once themselves), and systems with extensive network connections.

Encryption devices, "callback" units, user logs, terminals with unique IDs, nonstandard modems, and similar techniques have been employed in the struggle against hackers. Like the classic race between armor thickness and gun caliber, each improvement in protection inspires greater efforts to defeat it. These security devices and their limitations are discussed in several chapters and a special Appendix that reviews specific products. Hardware alone, Landreth argues, will never ensure complete security until it is as intelligent as a determined hacker.

The final chapter is titled "What To Do With The Hacker You've Caught." The system operator who threatens or provokes the harmless hacker should not be surprised if the system suffers some terrible vengeance. "If you treat a high level hacker contemptuously, your underestimation of his ability could cost you dearly," he says. On the other hand, a rational and respectful approach is likely to recruit the hacker as an ally, or at least an honorable opponent. As a dedicated game player, Landreth suggests a strategy: identify the hacker, confront him, enlist his aid, neutralize his works and then remove him.

Microsoft Press produces handsome, well-made books. *Out Of The Inner Circle* is no exception; the margins are wide, the typography is attractive and the editing is clean. The heavy hand of the Lawyer, which grows more and more apparent in this industry every day, may be seen in the "disclaimer" which deserves to be quoted in full (from the flyleaf): "Microsoft Press has not undertaken a comprehensive investigation of the fact and representations of the author with regard to particular computer systems, operating systems or other products. Consequently, although it has no knowledge of any inaccuracies in the author's treatment of particular products, Microsoft Press makes no warranties or representations regarding their accuracy and disclaims all liability therefor."

Since Landreth casually discusses the sort of information that computer companies routinely treat with a degree of secrecy once reserved for H-bomb manufacturing instructions, this sort of weaseling is, perhaps, forgivable. I find it amusing.

One aspect of the Myth of the Computer in our collective consciousness is what we may call the "Mozart syndrome." This is the image of the precocious computer genius, the prodigy who sits before the terminal with intuitive childlike understanding and Godlike power. The copy on the book cover call Bill Landreth "The Teenage Computer Wizard." The bright side of this myth, of course, is the hope that youthful innocence will somehow redeem a demonic technology. The dark side of the myth is the expectation that these kids will burn themselves out, or mature into warped and inhuman techno-nerds. In *Out Of The Inner Circle* you will find a sane, human voice, sounding clear through the hype that has come to surround the entire subject of hacking. Anyone with the slightest interest in computers should buy it, read it and share it with friends.

BOOKS

The Educational Software Catalog

1985, 1st Edition

Distributed by: *Soft Kat Inc., Canoga Park, CA*
Available through local computer stores and software dealers
Reviewed by: *Mike Markowitz*

This is a beautifully organized and printed catalog that will be of great value to curriculum designers, teachers, parents and any personal computer users concerned with education. Hundreds of carefully chosen software packages are classified by subject and listed by publisher, with list prices, grade levels and short descriptions. Everything is color-coded according to type of computer. Apple tends to dominate the market, but there are extensive listings for Atari, Commodore and the IBM PC as well. Over sixty publishers have products in the catalog, some have only one product, others are giants with dozens of titles. For many programs, a small color photograph of a typical screen is included. This gives the reader some idea of what the program is like visually, but text is not always legible at such a small scale. A serious effort went into keeping this catalog up to date (it is issued several times a year); a number of items have "DISCONTINUED" printed across the entry in big letters.

Finding good educational software is a problem for many users. Few stores are able to stock more than a handful of titles, and publishers of specialized products cannot afford to advertise in the high-visibility journals. Evaluation before purchase is an even bigger problem. I could never master trigonometry, a hateful branch of mathematics that has important applications in electronics. I was curious to find out if any good tutorial programs on trig were available for the Apple. Using the catalog, it took only a few seconds to locate a $50 one-disk program, and a monster $275 six-disk package.

A reassuring note says that "every program in this catalog has been reviewed and recommended by our team of educational experts." In addition, many items carry the National Education Association "Teacher-Certified" seal of approval.

The intention of this 112-page, magazine-sized booklet is for the user to order through a local store or distributor (the copy I saw was picked up in a computer store in a large shopping mall), rather than direct from the publisher, or the wholesaler. Some full-page advertisements must have helped to defray the printing costs.

EDUCATIONAL SOFTWARE

Roll Call USA

Published by: *Creative Software*
For: *Commodore 64*
Reviewed by: *Pat Hamilton*

How much U.S. history and geography do you really remember? If you feel you can just sit and watch as a competent instructor for the kids while they are learning from this trivia-style game, you may be mildly surprised. Oh, I'm sure you remember the names and capitals of all 50 states as they flash on the colored monitor, but how about each state's major industry, largest non-capital city, and the date each became a state?

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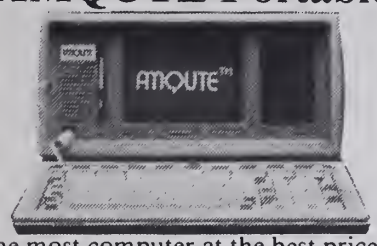

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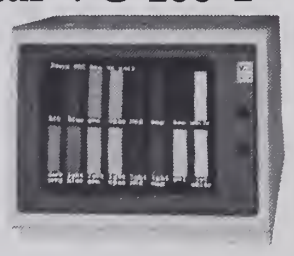

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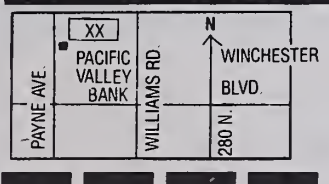

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EDUCATIONAL SOFTWARE

If you are feeling a little less than confident now, why not join the kids in play and watch the computer score your answers? As the screen displays a map of the nation, one state will be flashing. One to four players may compete as each will be asked to correctly spell and enter the name of the state and answer some questions. If you answer correctly, you will be awarded points and the computer will emit a joyful tune; incorrect answers produce the proper response and a computer "booing" sound. In all sets of questions, you are first asked to name the state and then to choose your category question. The order of the states is changed each time you play.

The speed of play is player-controlled, and if you're still feeling incredibly confident, try the Flash Test and then opt for "fast." A word of warning, however: this calls for quick state recognition and the abilities of a speed typist.

The game is entertaining and educational. It offers correct answers to all missed questions or misspelled entries, and with repetition, players can't help but learn U.S. history and geography during the course of play.

American History

Becoming A World Power 1865 – 1912

Published by: *MicroLab, Highland Park, IL (1985)*
Version reviewed for Apple II series, other versions available
Reviewed by: *Mike Markowitz*

With some effort, it is possible to make American History boring. The story of a people drawn from the dregs of humanity, who subjugated an entire continent in only a few centuries and created astonishing works of literature, technology and social organization can actually be made so dull that students in a classroom will HATE hearing about it, even though it is their own heritage! *American History: Becoming A World Power 1865 – 1912* shows that this can even be done on an Apple computer, a device that normal kids usually cannot be kept away from.

Regrettably, MicroLab has taken one of American history's less scintillating chapters and made it downright boring

Understand that Reconstruction, Industrialization, The Closing Of The Frontier, The Rise Of The Cities and The Origins Of Imperialism do not add up to the most exciting period in our national saga. There was a succession of bland Republican presidents. The economic issues were complex (can anyone imagine getting worked up over the coinage of silver?). The takeover of Hawaii, the Philippine Insurrection and the intervention in Mexico do not exactly reflect credit on American foreign policy. But a good teacher, with a bit of academic freedom, a good textbook and a few good films, can teach this period in a way that will keep those high school students on the edge of their seats, even in the last period of the day. This software package from Micro Learn will not help. It is a classic example of an electronic page-turner.

I cannot believe how slowly it runs. It goes back and churns the disk drive after every frame. The programmer ignored even the simplest tricks that would speed up the user interface. For example, you must input a number and also hit the enter key every time. It should be sufficient to just make one keystroke.

The blocks of text are too long. The text itself is deliberately watered down to avoid any sort of controversy. This is deadly to the serious teaching of American history. While there are no obvious errors of fact or omission in the text, there are so many bland generalizations, and so few sparkling nuggets of human interest, that even the most highly motivated student will have to struggle to keep plugging away at screen after screen of "tutorial."

A typewritten 25-page manual provides clear instructions, supplementary materials, and a list of Behavioral Objectives. Teachers are taught to value Behavioral Objectives in education courses. Good teachers forget about them whenever they interfere with the excitement of learning.

This product cannot be recommended. It will probably be successful with those school districts where the primary software acquisition guideline is that nothing may resemble a game, or be fun.

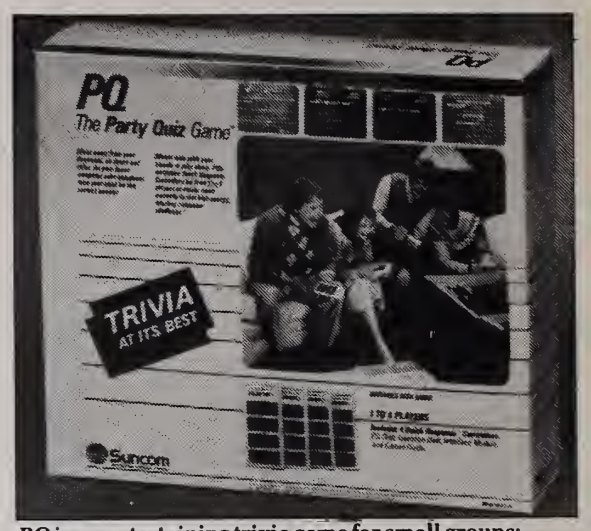
GAME SOFTWARE

PQ: The Party Quiz Game

Published by: *Suncom, Inc.*
For: *Apple, Atari and Commodore*
Reviewed by: *Pat Hamilton*

Trivia games were hot sellers in 1984 and it appears the market is still ripe in 1985, as all types of trivia computer games continue to flood the stores. *PQ: The Party Quiz Game* is somewhat different from most, as it allows up to four players to sit back from the terminal, each armed with his or her own controller, and vie for the fastest correct response to the question on the screen.

The questions which appear on the screen are short, easy to read, and aimed at the baby boomers. They can be multiple choice and answered by pressing buttons "1, 2, 3," or "4," or may be True/False questions which can be answered by depressing "1" for a true answer and "2" for a false. An experienced player can be handicapped by so indicating, which will allow him half the response time the others have. His controller will be inactive during the first half of the allotted time allowed for answering. The response time can be preset by the group.



***PQ* is an entertaining trivia game for small groups; however, guesswork may be just as useful as knowledge while playing**

A timer bar at the bottom of the screen starts running as soon as the question appears on the screen, and then becomes locked out. Each player is allowed only one answer per question. If the answer is correct, the clock stops, a "happy" tune plays, and the first player who answered correctly is awarded points. If playing in the competition mode, as soon as a correct answer is entered by one player, all other players are locked out. If playing in the social mode, each player is allowed to enter one answer until time runs out. This is where you take your time and really read the questions.

After each two rounds, a Report Card is displayed on the screen showing each player's score along with a comment (not always too encouraging) on his or her progress or lack thereof. This short intermission is accompanied by music — which may be turned off on request. Rounds 4, 7, 11, 15 and 19 are Lightning Bonus Rounds. The computer randomly selects a player who is given 20 seconds to answer up to ten questions. All players have a turn at the Lightning Bonus Round. Naturally, the object of the bonus round is to correctly answer as many questions as possible in the least amount of time.

The game is fun for small groups; however, you should know that there are some potential problems. After any extended amount of play, the questions begin to reappear. Secondly, due to the inclusion of so many True/False questions with a 50/50 successful answer ratio, a player may be tempted to depress button "1" or "2" as soon as the question appears on the screen. Since points are awarded on a rapid answer timing schedule, a player can accumulate massive points by never reading the question, but just playing the odds. We experimented with a group of four players; one player never read the questions but merely depressed the "1" key as soon as the question appeared on the screen. On every question, he had a 25% chance and on every True/False question a 50% chance of answering correctly. The other players attempted to read and answer the questions correctly. The player who never read a single question scored as high as the other three, because when his answer *was* right, he was awarded massive points for answering so quickly. Either that, or the other three were just poor at recalling trivia! However, if the computer catches you holding a button down on your controller at the time a question appears on the screen or trying to jump the gun, you will be labeled "CHEAT" and your controller will be disabled for the duration of that question.

GAME SOFTWARE

Murder By The Dozen

Published by: *CBS Software*
For: *Apple Macintosh*
Price: $44.95
Reviewed by: *Pat Hamilton*

All you Agatha Christie and Robert Ludlum fans, take heed, for murder is the name of this game. Something is rotten in the city of Micropolis. Folks have been turning up dead in the strangest places and under the oddest sets of circumstances. The city houses 28 locations, such as apartment buildings, doctors' offices, parks, and, of course, the local pub, and you may begin your investigation in any location. You are the top homicide detective on the force, and it is up to you to determine who has been committing these heinous crimes and why.

The game can be played by one to four players. Each of the 12 games starts with a case history of known facts about the deceased and the set of circumstances regarding the murder. This case history can be read by all players as it appears on the screen. Cases include such infamous murderers as Wally Snark, suspected drug dealer; Adrienne Bishop, high fashion model; and Lisa Fenton, runaway housewife. To win you must identify the murderer and explain the motive. You may also be asked to produce one or more pieces of physical evidence to support your case.

Players are advised to follow numerically through the case histories and games starting with number one, as each case becomes more detailed and more difficult. At the beginning of each game, the detective(s) will be offered a choice of seven courses of action. You choices include interviewing local townfolk, examining rooms, checking security systems, or examining files, fingerprints, photographs, etc. Each activity automatically clocks up a predetermined amount of time—questioning people usually does not account for much time, but examining rooms and files, although invaluable, can be very time-consuming.

Numerically coded answers to your queries (clues) appear on the screen. Every time a clue is offered, three minutes are added to your running timeclock and you are sent to the "Clue Book" to retrieve your answers. Since there is only one "Clue Book" provided, opponents must either leave the room or else benefit from what is discovered and shown on the screen. This mass exodus of players tends to undermine the competitive spirit of the game. Since keeping good notes is vital to survival, the game may lag as a player looks up five clues and carefully notes them for future use.

My advice for new players would be:

1. Play the games as listed in sequence;
2. Plan your trail carefully and don't waste time;
3. Interview only those people you must interview;
4. Remember to utilize all the resources available at the local police station;
5. Keep good notes.

While in the police station, you will be able to run a computer search through records, check fingerprints and photographs, and gain all sorts of other information. The game can be enjoyed by all players at almost any age level and mystery buffs will particularly appreciate it.

There are some built-in nuances to the game. Although detectives may travel around town interviewing and searching, players never see any movement on the screen. The entire game consists of an aerial view of Micropolis, which becomes boring after a while. I'm still not sure why the "Clue Book" exists as part of this game. Why the designers didn't just list the clues on the screen instead of enumerating them in a book is still a mystery to me.

In addition to the "Clue Book" the game has a "Solutions Book" which can be consulted only by the detective attempting to solve the case. The book can be read only by covering the answer page with a piece of "magic" red plastic. Upon completion of the game, when one player has decided to consult the "Solutions Book," he or she must have completed all the criteria; that is, name the murderer and all the facts and circumstances surrounding the case. At this point, if all has been solved correctly, the sleuth will be rated on his or her ability and the amount of time taken to solve the case. You may become known throughout Micropolis by such demeaning titles as "Bumbling Detective" or "Befuddled Detective" or the sought-after titles of "Professional" or "First Rate Detective."

Being a mystery buff myself, I enjoyed the game. My only complaint is that it really doesn't utilize the computer and probably could have been just as exciting as a board game . . .cheaper too!

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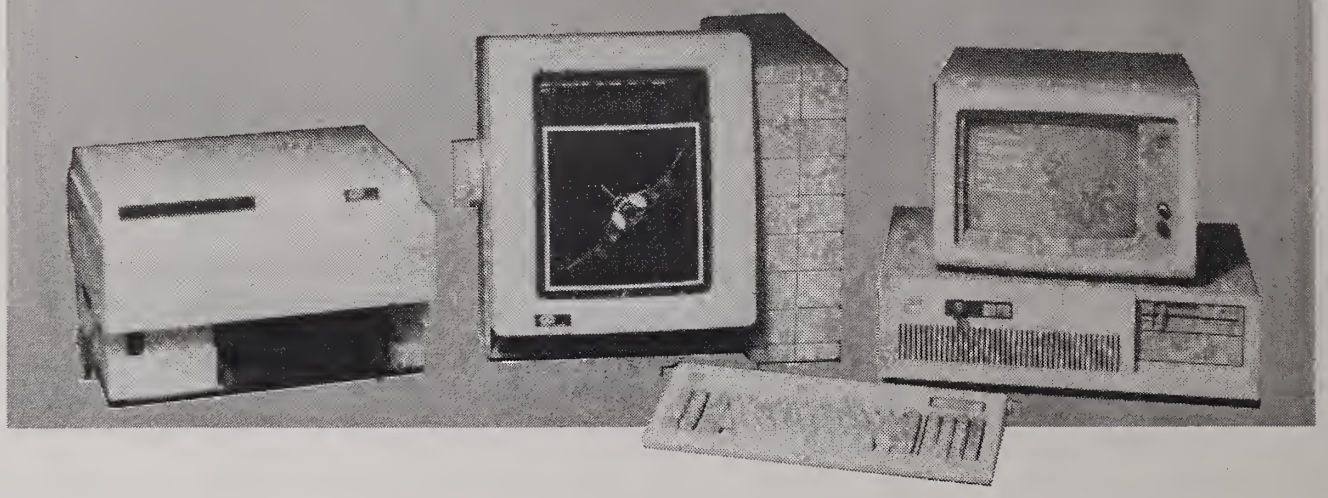

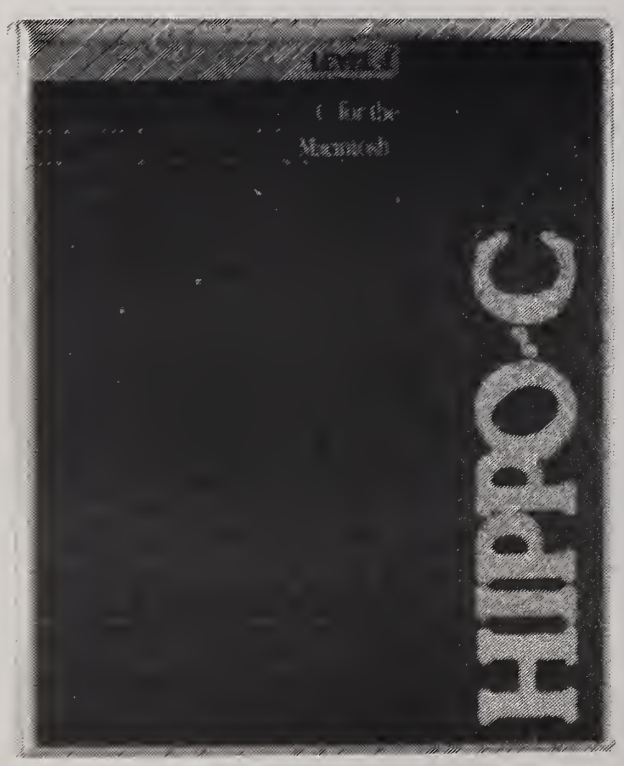

C For The Mac

Hippopotamus Software has something for C language programmers who also love their Mac. *Hippo-C Level 1* allows quick, easy C programming on a 128K Macintosh and includes an editor, compiler, linker, C run-time library, online tutorial/manual and a shell command processor. *Level 2* is a more sophisticated package which runs on a 128K model but can also take advantage of 512K. It includes, in addition to *Level 1*'s features, an assembler and full floating point support, including math and trig functions. Hippopotamus Software, 985 University Ave., Suite 12, Los Gatos, CA 95030, (408) 395-3190.

Speed Up dBase III

If you like everything about *dBase III* except its speed, or lack thereof, take heart. *Clipper* is a compiler which greatly enhances the efficiency of *dBase III* on IBMs and compatibles. It allows the program to run at 2 – 20 times its usual speed, and also allows the user to run multiple copies of the *dBase III* source code, enhance the code's security, and use the same features and commands as the original *dBase III*. *Clipper* is manufactured by Nantucket Software; it retails for $695 and is available from Delta Information Systems, 150 Chestnut St., San Francisco, CA 94111, (415) 362-6663.

NEW PRODUCTS

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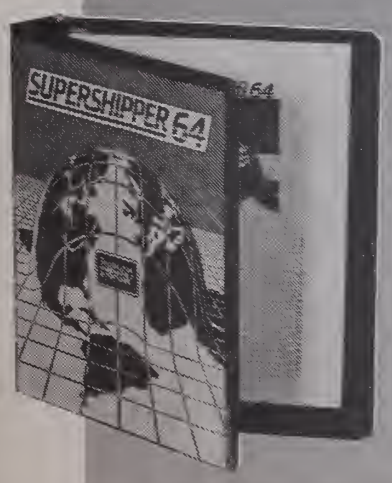
Telesensory Systems makes products to improve the accessibility of computer technology to blind and vision-impaired users. The VersaBraille II is a disk-based, portable lap computer with a Braille keyboard and display. TSI's line also includes Optacon, an electronic reading aid that transforms letters into tactile images, and VERT, a speech output device that gives full-screen access to IBM PCs, compatibles, and many mainframes and terminals. Telesensory Systems, P.O. Box 7455, Mountain View, CA 94040, (415) 960-0920.

New Graphics For Apple

Baudville, the folks who brought you *Pixit* and *Blazing Paddles* to enhance your Apple's versatility in graphics and illustrations, now brings you *Shapes And Fonts* and *Take 1*. *Shapes And Fonts* includes a host of text fonts, special shape table fonts, and numerous shapes from Animals to Zodiac. *Take 1* allows you to create full-color animation without benefit of programming skills, creating cartoons frame-by-frame, adding text as desired, and combining frames to form your "movie." Contact Baudville, 1001 Medical Park Dr. SE, Grand Rapids, MI 49506, (616) 957-3036, for the dealer nearest you.



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SWEET SAVAGE BYTE

The Beat Is On

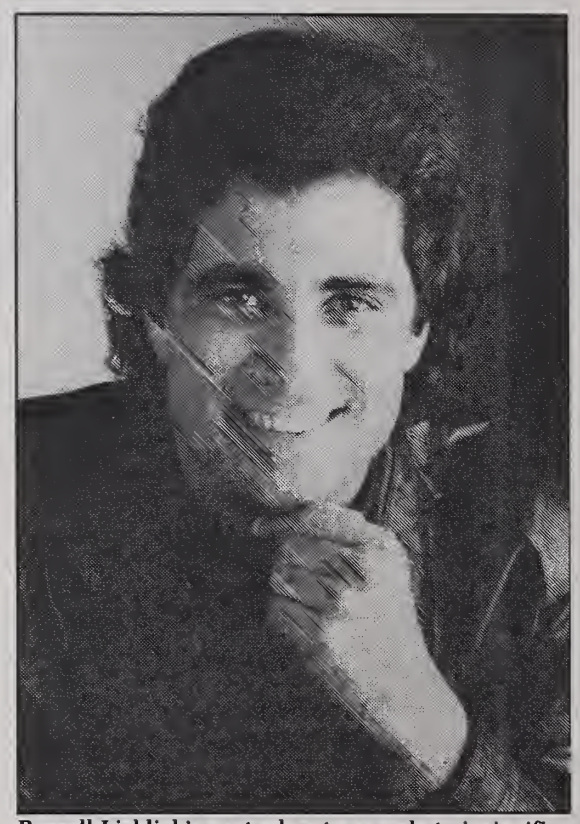
Russell Lieblich programmed *Web Dimension* and collaborated on *Master Of The Lamps* for Activision. Shortly thereafter, he visited picturesque Hollywood, California for an interview with Jina Bacarr. The rest — well, read for yourself...

By Jina Bacarr

Hollywood Boulevard is a dirty street in a dirty town, the master gamesman decided. He crushed the butt of his half-smoked cigarette with the heel of his shoe into the flesh-colored star of a blonde goddess long since gone to her Olympus. But L.A. *had* been home for a long time, Russell remembered, long before the pine sweet air of Northern California had tantalized his nostrils with an incense he couldn't ignore. And now he had been forced to return. And for what? To meet up with some lady reporter from a computer magazine whose reputation had earned her a monthly column, named of all untechnical things, Sweet Savage Byte. My God, life had been tough enough in the reckless lane of L.A. perfunctory interviews, but this one was going to be unbearable.

As Russell and his business associate entered the last bastion of the Hollywood Boulevard commercial center, he noted the talent walking the streets. They hadn't changed since the days *he* was a young musician playing the clubs with a couple of college degrees burning through his hip pocket. Most of these musicians were between gigs, or waiting for a break in that new club on the Strip. Russell breathed in the foul air with a new sense of pride. Those days were behind him now. He had made his own breaks and created a world that hadn't existed when he was a kid growing up on the streets of New York, a baseball in one hand and a guitar in the other. Music had remained his first passion. Music—the soaring notes, the beat in his bones, the mental beauty he experienced when the treble and bass exploded into new and exciting sounds and tantalized his soul with powerful emotions. The twenty pieces of music he had written for his games exemplified that excitement. He'd make sure Miss What's-her-name knew he wasn't just some psychedelic rocker with the beat in his eyeballs. Music was his life! He was also working on a romantic symphony marrying his love of classical and electronic music. And hadn't his two new pieces of software, *Master of the Lamps* and *Web Dimension*, been called revolutionary visual and audio artistic expressions in game software? From the haunting whispers of music on his evolutionary web to the hypnotic space music of his three dimensional magic carpet, Russell's objective was to open up a new experience for the player that would not only challenge his mind, but also reward his aesthetic sense with the thrill of music.

But the road hadn't been easy. After years of playing in piano bars, Russell kept experimenting with computer graphics and sound. Finally, he was able to design software (working with Peter Kaminsky on *Master of the Lamps*) that rewarded the player with spectacular visual graphics and audio excitement. He never dreamed when he was studying for his B.A. at the University in New York that his love of music would enhance his curiosity about physics to produce



Russell Lieblich's past adventures pale to insignificance in comparison to his encounter with Micro-Times' *femme fatale* in residence, Jina Bacarr...

audio/visual software in this new age of computerized entertainment. Let Miss Sweet Savage Byte put *that* in her bubble bath!

"Well, this is the place," Russell said in his slightly nasal accent. His words came fast, almost clipped at times, but more than one dewy-eyed female had sighed over the deep resonance of his voice. He opened the office door, wondering what kind of questions this high tech Lois Lane would ask.

"Yeah, whaddaya want?" a squeaky falsetto greeted him from the front desk as they walked in. Russell cringed as the stiletto-haired blonde looked him up and down as if he were a piece of hamburger ready for the grill. He returned the favor. In her black mini and brass-bullet buttoned vest, the receptionist looked like a three-dimensional Red Sonja looking for her Conan.

Her pink neon lips curved into an interested smile as the blonde punk goddess ushered him towards another office to meet the Queen of Computer Columns in person. As he walked down the hallway, Russell noticed glossies of Billy Idol scowling at a cutesy grinning Cyndi Lauper poster on the wall. He wondered what he was getting himself into: Nerd Wave? or maybe Heavy Modem?

"Hi, Russell, my name is ..." her voice tuned sweetly into his ear as he walked into the room. This was the infamous Brenda Starr of the computer tabloids? The redhead who took on the entire Pig Sty? He hadn't expected this. Nervously, he reached for another cigarette while he appraised her appearance. Her green eyes sparkled, then flirted as she asked him if he would explain the games and their objectives. Quickly, he ran through the different tactics and strategies of the games, figuring that if he drew her a map of the freeways she'd probably think it was a game of tic tac toe. He *did*, however, notice her soft, plain green dress and the delicate antique lace fichu around her shoulders. He lit his cigarette and took a couple of smokes while he caught his breath. What had he let himself for? No computer reporter looked like she had just stepped out of the 1900 Paris Exposition. Worse yet, he could imagine what kind of a story she would write—that is, *if* she could write.

"What kind of music did you compose for your software?" she asked with a smile and turned on her tape recorder. The sweetness in her voice was still there, but Russell knew that look in her eyes. Another determined female. Russell bit his lip and the taste of stale tobacco on his tongue made him grimace. No use kidding himself. This was going to be another gruelling interview after all. And recorded yet. Damned machines always made him uneasy. As he answered her questions, Russell felt the words coming fast and with more abruptness than usual. Formal and businesslike, he went through his spiel. He'd show this lady reporter with the allure of a comic book heroine and the tactics of Sam Spade she wasn't fooling him one bit.

"Baroque, jazz—and of course, rock," Russell finished. Why had he felt compelled to let her know he wasn't just some four-eyed computer hacker who never looked beyond his computer screen for visual delight? "It's sort of like a home computer *Fantasia*," he finished and looked around for a receptacle to dump his half smoked cigarette. As the redheaded columnist handed him an empty styrofoam cup still reeking with the smell of office coffee, he noticed the elegance of her fingers and the light sparkle of her pink nails. These fingers pounded away at a keyboard? he questioned. He was beginning to wonder if she really did write the column, or was she strictly a front for some wily old hack with a cigar behind his ear used to covering the tabloid beat? Well, she did seem to have a spark of intelligence. Maybe she would do him justice. Let the people know that Russell Lieblich was a man with a dream—and years of hard work behind him. How could he tell her he yearned to write the music that would lead players right into the twenty-first century with the drama of the classics and exquisite technical percussions never heard before? His software games were the first step in that dream.

Russell decided to tell her his story. This was going to be an afternoon well spent after all.

Sometime later, Russell again found himself staring at the cement stars on Hollywood Boulevard where many a dream had crashed. He knew now he wouldn't be among them. It was still a dirty town, but he had beaten it. His star was rising fast and the little lady from the computer mag just might make it shine a little brighter. He pulled out a fresh cigarette from his new pack. Why not take in some old sights while he was here? The club where he used to play, the all night market, his old digs ...

Russell Lieblich walked slowly along the gaudy boulevard of forgotten dreams and lit up his cigarette. He wasn't in a hurry to leave anymore. He had some unfinished business first. A date with his past — and a rendezvous with his future. It felt good to be home ... if only for a little while. □

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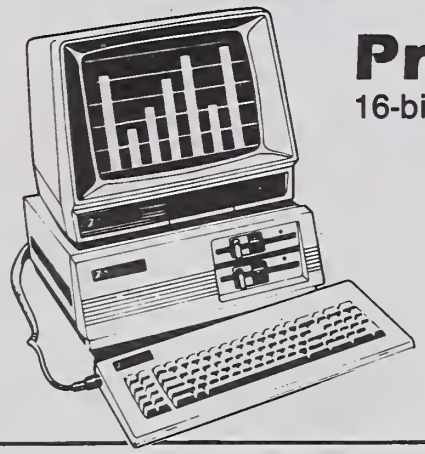

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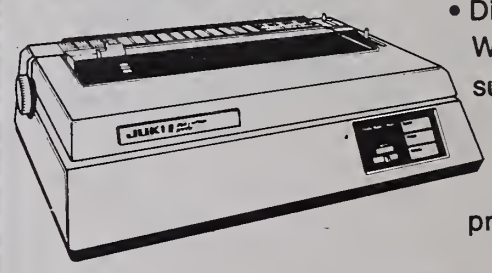

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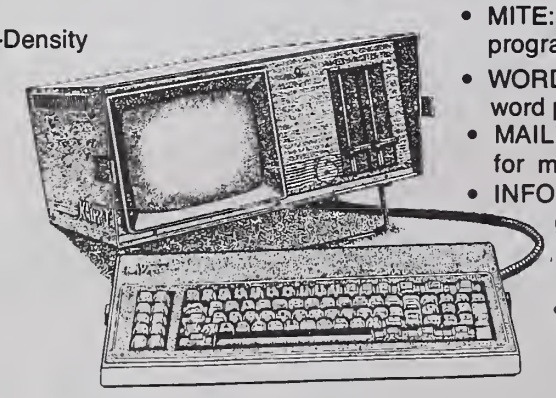

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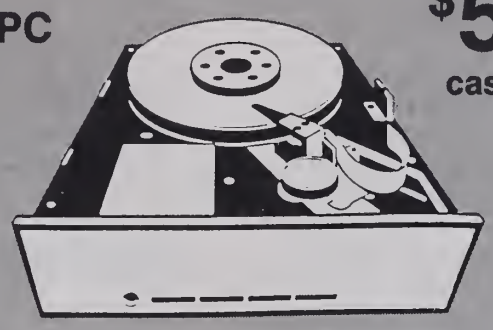

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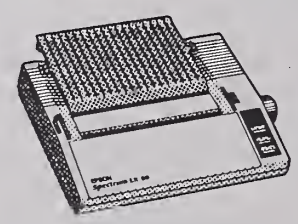

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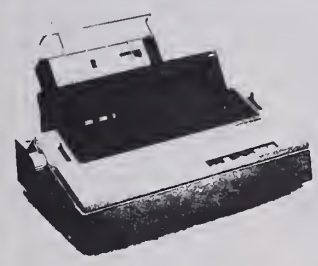

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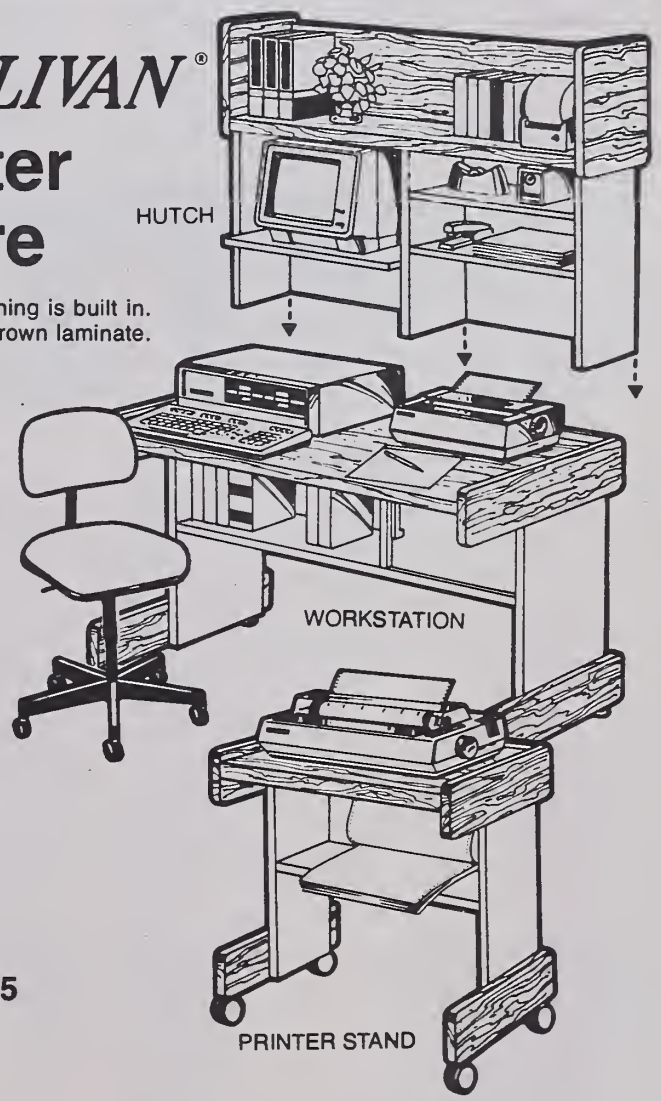

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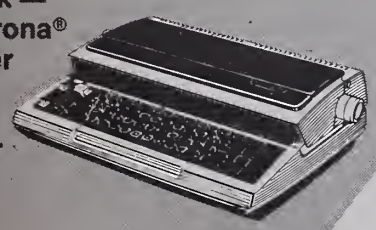

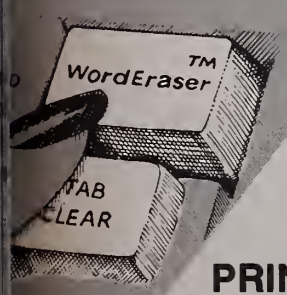

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WHAT'S NEW WITH THE MACINTOSH FINDER, MACWRITE & MACPAINT

By Barbara Leone

Macintosh users who have not yet acquired the new Finder, *MacWrite* and *MacPaint* are in for some pleasant surprises.

First, this Finder (version #4.1) has a Shut Down option in the Special Menu. This option allows the user to eject both disks at once without the trouble of selecting them first. With the old Finder it was possible only to move, duplicate, rename, or discard documents, folders, and applications with the **by icon** view displayed on your directory window. With the new Finder however, any of your desktop work can be done whether you have selected, from the View menu, **by icon, by name, by date, by size** or **by kind.**

Another handy addition is that of the padlock displayed with a locked document. If a folder or a disk has been locked a padlock will appear in the top left corner just below the title bar.

With the old Finder, it was not possible to drag an icon from an open window to the shadow of another open icon. This has been changed with the new version. As before, if you drag an icon to the open window of your disk you can place it anywhere you wish; if you drag the icon to the shadow icon the Finder will place it in the next available location.

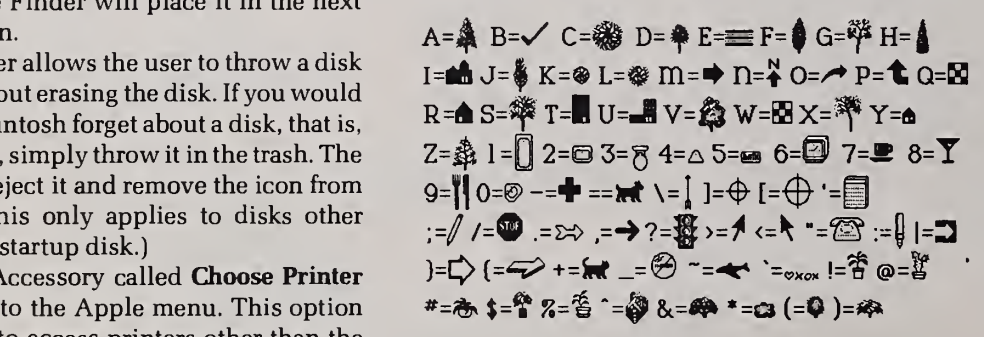
The new Finder allows the user to throw a disk in the trash without erasing the disk. If you would like to have Macintosh forget about a disk, that is, stop asking for it, simply throw it in the trash. The Macintosh will eject it and remove the icon from the desktop. (This only applies to disks other than the current startup disk.)

A new Desk Accessory called **Choose Printer** has been added to the Apple menu. This option allows the user to access printers other than the Imagewriter. If you are using a LaserWriter, for example, after the installation it will appear as an option in the Choose Printer dialog box, allowing the user to access this printer. The Macintosh is preset to work with the Imagewriter. However, you will use the Choose Printer option only if you connect AppleTalk or another piece of hardware to the printer port and want to designate the modem port for the Imagewriter.

Most Macintosh users have heard about the Switcher, a new program that allows the user to move from one application or document window to another quickly and painlessly. The new Finder includes an option in the Special menu that in no way replaces the elegance and appeal of the Switcher, but does add extended flexibility to the Finder. This option in the Special Menu is called the **MiniFinder.** With the MiniFinder it is possible to select up to a total of twelve mixed or matched documents and applications. The documents and/or applications you select for the MiniFinder must be on the same disk, although it is possible to move between disks with the MiniFinder. Once the MiniFinder is installed on your disk, whenever you start from this disk the MiniFinder window will appear on your DeskTop. Once it's installed, you can remove the MiniFinder by pressing the Finder button in the MiniFinder window and throwing the MiniFinder icon in the Trash, or by selecting **Use MiniFinder** and clicking on Remove. All of the housekeeping involved in using or discarding the MiniFinder detracts from its usefulness.

Probably the most appreciated addition to the new Finder is the **ShutDown** command. Found in the Special menu, this command eliminates the necessity for selecting your disks to be ejected and restarts the Macintosh by either turning the power off or placing a new startup disk in the disk drive. Probably one of the most aggravating features of the old Finder, in addition to the overall reduced speed, was waiting for disks to be ejected from the drives. Thank you, Apple, this one really shows you care.

A new font called Taliesen has been added to the Update disk. This is a pictorial font with a lot of cute little pictures that can be used in your documents in various ways: to make custom stationery, for example, or to be moved into *MacPaint* and enlarged or changed. See the illustration below for an example of some keys associated with the pictures to be found within the Taliesin font. When experimenting with these, watch what happens using the same keys with the Caps Lock key in lower case. The new Font Mover has a new option to allow not only copying and removal of fonts among disks, but desk accessories as well.

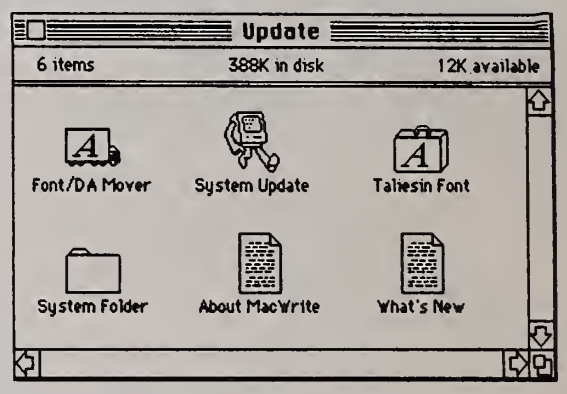


To update all of your disks to the new Finder, the update disk has a helpful utility. The system update icon, which looks like a walking Macintosh (see illustration), can be opened as with any application and will step you through the process. It installs the new Finder, the Choose Printer desk accessory, the System file, and replaces any Imagewriter file. Your scrapbook files will remain intact.

If you are using *Hayden Speller*, be careful. If you have not received an update from the manufacturer, the program will not work with your new *MacWrite* files. This is the only program that I found a problem with, but there may be others.

A word of warning: if you like all of those old fonts you may have collected with the old Finder, hang on to them on a separate disk and use Font Mover to add them to your applications. For more information about the Finder & Font Mover, the What's New icon on the System Update disk will describe the changes. What's New can be printed with *MacWrite*.

Apple tells me that no noticeable changes have been added to *MacPaint*. The changes that have been made were mostly bug fixes.



The new *MacWrite* is called *Disk-based MacWrite*. With this version, the increased speed is based on continual access of the disk as opposed to the internal memory. The scrolling of documents is much faster. If you only have one disk drive, it is recommended that you keep both the application and the document you are working on together on the same disk; otherwise, you will spend a lot of time swapping disks.

All documents created in the old version of *MacWrite* will be automatically converted to the new version when attempting to open them. Macintosh will display a message asking if you wish to convert your document. Clicking the mouse on the OK button will begin the conversion. The document will come into view as untitled where previously it had a name. If the original name is given to the saved document, it will no longer work with the old *MacWrite*. If you want to keep the original version to use with the old *MacWrite*, give the converted document a new name. Drag the document to a different disk for use with the old *MacWrite*. Once converted for the new *MacWrite* a document cannot be changed back to the old format.

The new spacing command **6 lines/inch** is standard typewriter single spacing. Some font setting will look chopped off with this option or with subscripts and superscripts. One way to avoid this chopping effect is to experiment with printing. Another way is to insert a ruler and turn off the 6 lines/inch setting where applicable.

To check the size of your documents the Apple menu has an **About MacWrite** option which will constantly give the user an update as to the size of a document being created. The update disk has a file, also called **About MacWrite,** which gives more information about these and other *MacWrite* enhancements; it can be printed and saved for future reference.

Apple is offering these updates free to Macintosh owners. Visit your local dealer, preferably the one where you bought your Macintosh, and they will supply you with the update. □

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CP/MACHINATIONS

Newsweep

Free Software Improves CP/M Efficiency

By Robert D. Athey, Jr.

There are millions of CP/M devices in use today, thanks to Kaypro, Osborne, and others, and this constitutes a substantial and stable market, with plenty of active users and consumers of add-on devices and software of demonstrated utility. Despite all this, there has been a general tendency among computer publications to ignore the CP/M user, a fact which, as a 2+ year user of a Kaypro II, I find very frustrating. In writing this column, I regard it as my objective to be an empath to the CP/M user and to attempt to identify software and hardware worthy of investment. I would also like to pass along tips from other users.

Although we use our computers for a variety of reasons—e.g. operating a small business, writing for publication, or doing schoolwork—we have in common the need to use the operating system that controls the computer, to use the simple commands that tell us how much space we have on the disk, tell us what's on a particular disk, or copy material from one disk to another.

The original versions of CP/M had six main programs in their disk utility packages, including *DIR.COM*, *STATCOM*, and *PIP.COM*. These programs take up a fair amount of disk space (the latter two take up 14Kbytes), but through the good offices of people who donated their skill and time, alternatives were made available.

I find that the two most useful are the *SD-##.COM* and *NEWSWEEP* series of programs. Both have gone through multiple generations because of debugging and the addition of useful features; the *NEWSWEEP* versions are now so augmented with useful features that the program uses the same disk space as the old *PIP* and *STAT*, but now includes *ERA* and *REN* substitutes as well. You can usually get a copy of *NEWSWEEP* from your user group library or any number of remote bulletin boards.

The *NEWSWEEP* version currently available is version number 2.07. It usually comes with an excellent documentation file, often called "NEWSWEEP.DOC." Since *NEWSWEEP* has a relatively clearly set up menu, with code letters for each option and a word or two to describe each letter's function, it is easy to use. Program operation starts by typing in the name of the program in response to the "A+" prompt—in this case, the name of the program is "NWSWP207." The resulting display shows the author's name (Dave Rand), along with an itemization of the number of files on the disk, how many Kbytes they're using, and how many Kbytes are free. The next line shows the first program on the disk.

The "HELP" option is called up by simply typing in a question mark. The menu is set up alphabetically

The discussion of this program series in the PeopleTalk book on free software warns that hard disk machine users must be disciplined in their designations of program names with user areas (i.e., specify "B0" rather than "B"). The simpler multidisk machines do not require such rigor, however. (I am particularly impressed with PeopleTalk as publishers, as they don't use docu-gibberish. The periodicals, such as the user group newsletters and *Microcornucopia* or *User's Guide*, might be right on target for you, too.)

How useful is *NEWSWEEP*? You have to use it to appreciate how much better it is than the CP/M programs it replaces. Sure, some of the software command schemes are a little peculiar, but they become second nature after a while, and they are a lot less obtuse than the CP/M commands they replaced. There are help menus in the software, so use them frequently. There is documentation, and it pays to have it printed, so it will be close at hand (and use masking tape to put tabs on frequently used sections to reduce wear!)

It would be difficult to over-emphasize the importance of user groups. There are three kinds of computer people, hardware nuts, software nuts (hackers), and users. I belong to the latter category, because of what the machine can do for me. You will find all three types at the user group meetings, and you'll find helpers and empathics from all three categories. Go to the local user's group meetings, as there is always someone there who's fought the same battle you did, and won it. It pays to trade success and failure tales with people of your own or slightly better skill levels, as it helps all involved. □

SYMBOL	MEANING
A	**"AGAIN,"** or repeat tag, after a tagging for a mass operation of some type, and doing the operation;
B	Move backward on the listing (A return will move the next line up);
C	**"COPY,"** which will query the disk drive onto which you want a copy. You can simply specify "B", or tell it "B:NEWNAME.NNN" to simultaneously move and rename (if you have a hard disk, use "B0");
D	**"DELETE,"** which will kill the file after an answer of "Y" to the confirmation query;
E	**"ERASE"** all tagged/untagged files (your choice by specifying at query);
F	**"FIND"** a particular file;
L	**"LOG** in New User area" to change disk drive being examined (a useful check on a transfer);
M	**"MASS COPY"** to move two or more files to a new disk or user area;
P	**"PRINT"** file where cursor lies. This gives an exact copy of the file with imbedded style or control characters (like ampersand commands in *Perfect Writer* files—a good check in format errors);
Q	**"SQUEEZE"** or **"UNSQUEEZE"**: The squeeze operation condenses the file up to about 40%, a real disk storage space saver. The squeezed file is stored on another disk, as designated by the user after query. This is especially useful in storing backup files!
R	**"RENAME"** file where cursor is positioned or tagged files (query on what OLDNAME and NEWNAME comes up);
S	**"SPACE"** remaining on current drive;
T	**"TAG"** which places an asterisk next to the file display and tells how many Kbytes are in the tagged file and total number of Kbytes tagged;
U	**"UNTAG"** file where cursor lies;
V	**"VIEW"** equivalent to the BASIC "TYPE" command as a CRT dump of file, a screen at a time;
W	**"WILDCARD,"** a quick way to tag a group of files, such as all files with "*.DOC" names;
X	**"EXIT"** to CP/M;
Y	**"SET STATUS"** of file: (can change R/O to R/W or the reverse with "R" command on query, or can use "S" command to make the file a system command—that does not appear on the directory). The latter is useful in replacing the standard CP/M commands like "REN.COM" and "ERA.COM" with the "NEWSWEEP" file;
?	**"HELP"** call up menu.

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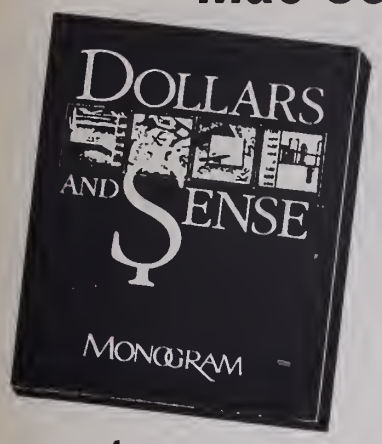

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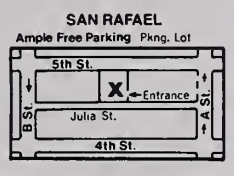

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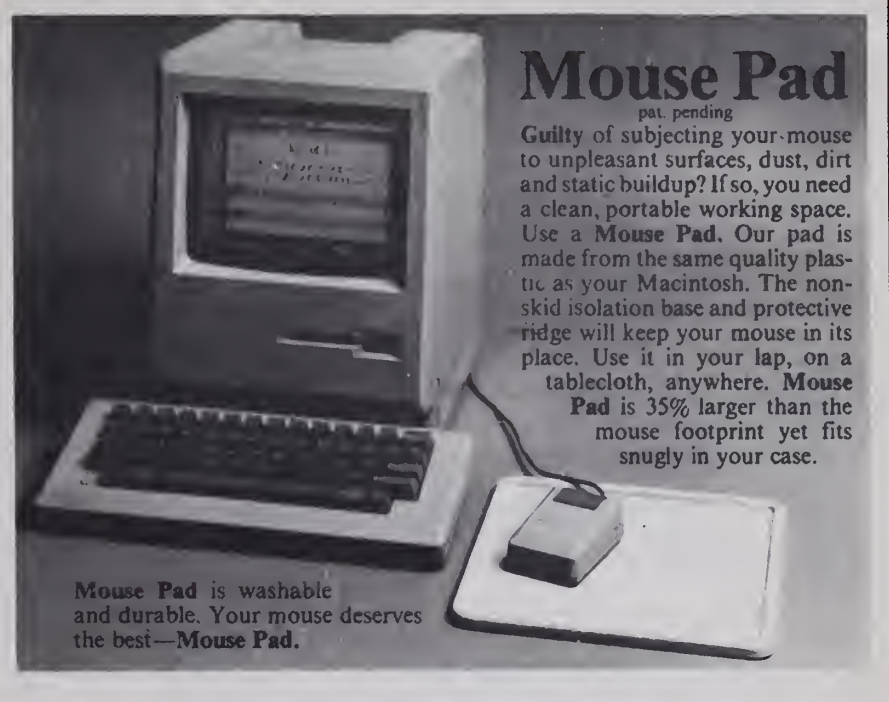

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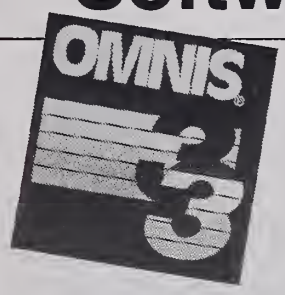

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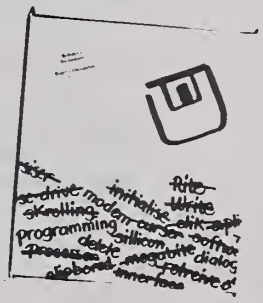

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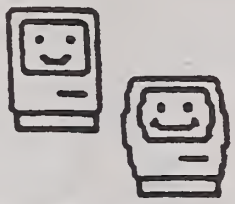

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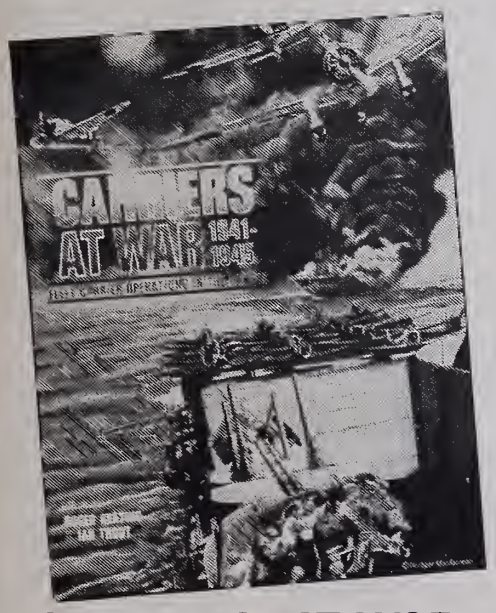

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USER GROUP NETWORK

By Mary Eisenhart

Our own **Mike Markowitz** has some good news for owners of **Franklin** computers. While Franklin itself is still moribund in the wake of its legal hassles, Franklin users are nothing of the kind. There is now a national Franklin Users Group, which will offer a public domain software library and hopes to start an on-line BBS as well. Also in the works is a newsletter for group members, and the ever-enterprising Markowitz observes that the group "even threatens to pay a nominal fee to newsletter contributors." So, all you frustrated Franklin owners out there, this is your chance to pool resources with others of your kind. Contact the Franklin Users Group at East Wind Road, Apt. L, Tecumseh, MO 65760.

From the farthest reaches of New York comes a letter from **Jeffry Luria,** who's the president of the **MicroPro Users Group of America.** Luria says, "We are located in New York, but are a national group with over two hundred members from various states as well as other countries." Members live as far away as Japan, Venezuela, and Israel. The group is dedicated to supporting the entire MicroPro line, but places special emphasis on *WordStar* and *InfoStar*. Users of all types of hardware are welcome. The group publishes a monthly journal called *OmniStar*, and may be reached c/o Procyn Associates, 140 Riverside Drive, New York, NY 10024. Should you be inclined to contact fellow MicroPro enthusiasts by phone, the group's phone number is (212) 595-4811.

The **San Francisco First Osborne Group** has been going through a few changes, and announces its reorganization as a multi-computer user group for owners and users of all types of portable computers and users of the CP/M operating system. In addition to maintaining its relationship with the national First Osborne Group, the group has affiliated with the Kaypro Corporation User Group Department as a member KUG, and is seeking to establish relations with manufacturers and vendors of other CP/M based products. The new organization, now known as the **San Francisco Computer Society,** meets at St. Aidan's Church, Diamond Heights Blvd. at Goldmine Drive in San Francisco, on the fourth Thursday of each month starting at 7 pm. All are invited, and annual dues are just $10.00. The Society's new mailing address is P.O. Box 783, San Francisco, CA 94101-0783. Please direct all inquiries to this address.

Eugene C. Dinovo of Sepulveda has a slightly unusual users group for the **Tomy Tutor** computer. You may remember Tomy as the Japanese toy company that brought you such gems as Mr. Mouth and the Air Jammer car series, but they have their high-tech side, as Dinovo reports: "The Tomy Tutor computer is a children's 16-bit computer with built-in BASIC and GBASIC. We feel that it is the easiest computer on which to perform actual animation using GBASIC. The members are enjoying it immensely and would like to reach as many owners as we can." You're never too old to play, so contact Eugene at P.O. Box 37, Sepulveda, CA 91343.

All you FORTHians out there, **Linda Kahn** of the **FORTH Interest Group** has some news for you. First of all, FIG has devised a plan, underwritten by Mutual of New York, to offer members low cost group health insurance. FIG membership is $20.00 per year in the U.S., and members of this global organization also have access to product discounts, group life insurance, an on-line data base, a job registry, FORTH literature, and an ever-increasing array of other services. Not only that, FIG will be holding its seventh national convention, to be held this September 21 – 22 in Palo Alto. Start planning now. Contact Linda at (213) 478-7398 for more information, or contact the main FIG organization at (408) 277-0668, P.O. Box 8231, San Jose, CA 95155.

C-TUG (a.k.a. the **Commodore Technical Users Group**) sends along its highly informative newsletter, *Syntax Error*. These genial folks would like to remind you that they have *two* BBSs for members, C-TUG at (714) 636-1908 and GRAPEVINE at (714) 974-4284. The club meets the fourth Sunday of the month from 10 am to 1 pm at Mercury Savings and Loan, 1095 Irvine Blvd., Tustin, CA. Should you wish more information about this organization, please contact C-TUG at P.O. Box 1497, Costa Mesa, CA 92628. The club also held an *Archon* tournament last month — no word yet as to the winners.

Paula Martin of the **South Bay Kaypro Users Group** reports that the group is just getting settled in at its new meeting site, the Cupertino Public Library. Like many groups in the South Bay, the KUG has been in an unsettled state since Dysan, which seems to have opened up its auditorium to every users group in town, sold the building. No longer homeless, the group held its first meeting in the new quarters June 3. Paula reports that for the next couple of months the meeting schedule is likely to be a bit uncertain, and she recommends that you call **Chuck Hansen** at (408) 257-5244 or P.O. Box 390088, Mountain View 94039-0088 to find out when the next meeting will be held. She also reports that the group has just acquired a 200-diskette public domain software library from SIG/M, so that might pique your interest some more.

And South Bay **Kaypro** users who feel like they might profit from some training classes might want to contact **Bob Balan** of Computer Insights in Fremont. CI is offering classes on beginning, intermediate, and advanced levels in its Kaypro Computer School; topics range from *WordStar* and *dBase* to Intro to Computers. Call Bob at (415) 490-0685 for more information.

Budding showbiz types may be interested in the upcoming **ShowBiz Expo '85,** which will take place June 27 – 29 at the Santa Monica Civic Auditorium. The Expo will showcase products and ideas from the business and computer world for the TV, film, and music industries. This information comes to us from **Bunnie Strassner,** who just happens to be the wife of **Norman Strassner,** a.k.a. **Videoman,** who appeared in our March BBS article. Among other attractions, the Expo will feature a keynote speech by author **Michael Crichton** and conferences on topics ranging from "Financial Statements: What Every Creative Person Should Know" to "Spectrum of Computer Graphics in Entertainment." Contact Bunnie at (213) 668-1811 for more information.

The ***ENABLE*** **Users Group** held its first meeting in San Francisco on June 4; *ENABLE* representative **Cheryl Hazen** spoke about Version 1.1, due out shortly. The group is trying to set up a regular schedule of monthly meetings, and hardworking founder **Lion Goodman** heartily invites prospective members to contact him at 38 Glen Drive in Mill Valley (94941) or call him at (415) 383-2337.

The dauntless **MicroTimes Roving Speaker Squad,** or a reasonable facsimile thereof, will be stopping off at the **BAKUP Kaypro User Group** meeting on June 18. Full report next month. We *like* going and talking to user groups, although sometimes it's a problem juggling the dates and deadlines involved, so if you're a Bay Area group in search of free magazines and occasionally witty repartee for your meetings, let me know and we'll try to work something out.

Send this and all other relevant information (when you're holding your group's summer picnic, Disneyland trip, Scenic Tour of Silicon Valley, or other events) here to Mary Eisenhart, MicroTimes, 5951 Canning St., Oakland, CA 94609. □

BULLETIN BOARDS

NORTHERN CALIF.

Kayfog RBBS & RCP/M (Fog System 11) (415) 285-2687; Free; special help for newcomers, Kaypro, Morrow, Osborne, and CP/M.

Napa Valley RBBS/RCP/M (707) 257-6502. Interests in Atari, Apple, Osborne, dBase II.

Bay Area Atari Users Group 24 hour BBS (408) 578-2390.

NCR BBS of Northern California Bulletin Board System for all users of NCR Microcomputers (Decision Mate V and PC-4). Learn more about NCR's microcomputers.

TI-Comm BBS 8:30 pm to 6:00 am, 7 days a week. 300 baud. Multiple message bases, features, and ELIZA. (408) 926-4413.

The Bay PBBS 300/1200 Baud full duplex. 24 hrs., 20 megs online. Apple super-32 computer section, excellent Macintosh/Apple II downloads. (415) 775-2384. Easiest to get through in the mornings.

TI BBS 300 baud, 24 hours. All systems welcome. Free. 4 message bases, large data base on various subjects. (415) 994-4877.

BAKUP (Bay Area Kaypro Users and Programmers) (415) 223-2237 RBBS & RCP/M — Must be a member of BAKUP, P.O. Box 20181, Oakland, CA 94620.

NCR BBS of Northern California (408) 744-0556. Bulletin board for all users of NCR microcomputers (PC-4 and Decision Mate V). Learn more about NCR's microcomputers. Contact Lee Sherman or Jim Chandler, 756 San Aleso Ave., Sunnyvale, CA. (408) 743-4933.

SiMMS (Silicon Valley Interchange) 4000 files on line. New releases, communications, and utilities for CP/M based computers are available on a nonprofit public-domain, 24 hour remote CP/M system. The SiMMS (Silicon Multiple Message System) Network Headquarters runs on a CompuPro 816 with 40 megabyte hard-disk drive. The Modem number is (408) 732-9190. To register, send a six-digit password and $25 to SiMMS Headquarters, Silicon Valley Interchange RCP/M Registration, Box 532, Cupertino, CA 95015. Sysop: Ed Svoboda Jr.

MBL Referral System BBS A board dedicated to personal messages and advertising listings. Modem: (415) 444-6362; 6 pm - 6 am weekdays, 24 hours weekends. MBLRS BBS users meeting Saturdays, 5:30 pm, 1555 Lakeside Drive, Suite 23, Oakland. Call (415) 444-3033 for info, ask for Mel.

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ROOTS—BBS. Available 24 hours, 7 days a week, supports 300/1200 baud at 8/N/1. Specializes in genealogical info with messages, upload and download of CP/M, DOS, Apple software. Sysop: Brian Mavrogeorge. (415) 584-0697.

Vortex BBS. (916) 481-0194. 24 hours, 300 baud. Pamela Lunsford, sysop.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7b bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

Welch Net II. A public FIDO BBS. Message areas devoted to Turbo Pascal programming and Seequa Chameleon computers. Available 23 hours/day. (415) 391-9148.

SOUTHERN CALIF.

Gamenet Bulletin Board System. BBS is devoted 100% to gaming subjects. 24 hours, 20 boards, 10 D&D/RPG boards, Alkahest, professional book reviews. Unending Story, Adventurers' Training Ground, Game Hint, etc. Sysop: L.J. Phone: (213) 541-8039.

The Consultant's Exchange BBS Serving professional computer consultants and students since 1983 with the finest public domain software for the IBM-PC. Featuring consultants list and job list. (714) 842-6348 24 hours.

Thousand Oaks Technical (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

Granada Engineering Group RCP/M (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

Aware II (213) 851-0780. Sports BBS with different discussion boards centered around USFL, baseball, etc.

Junkyard Data (213) 867-9541. Multi-interest board in Norwalk with everything from jokes and for sale items to reviews (movies & software), trivia questions, an adults only section, etc.

Marina Matchup (213) 397-6300. This Mar Vista-based dating board operates with Martian software.

Lynzie's Motherboard North Hollywood; multi-interest board with public boards, entertainers exchange, job exchange info. Runs on IBM-PC with 10 mb storage, operates on Martian Software, runs 24 hours a day. (818) 508-6482.

Bulletin Board System. BBS devoted to handicappers and racing fans in So. Cal. On line every weekend. Log-on: race data for Santa Anita, Hollywood Park and Del Mar. (213) 934-6026.

Videodrome BBS. Where computers and video meet. (213) 324-5882 from 12 pm-2 am. Open every day, 7 days a week. A Commodore 64 system.

HUG1. The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. (213) 874-8256.

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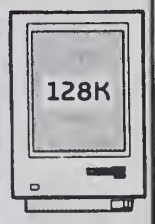

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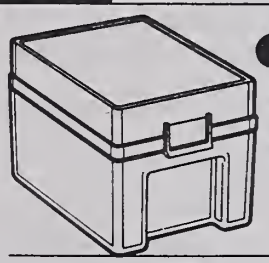

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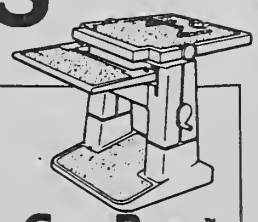

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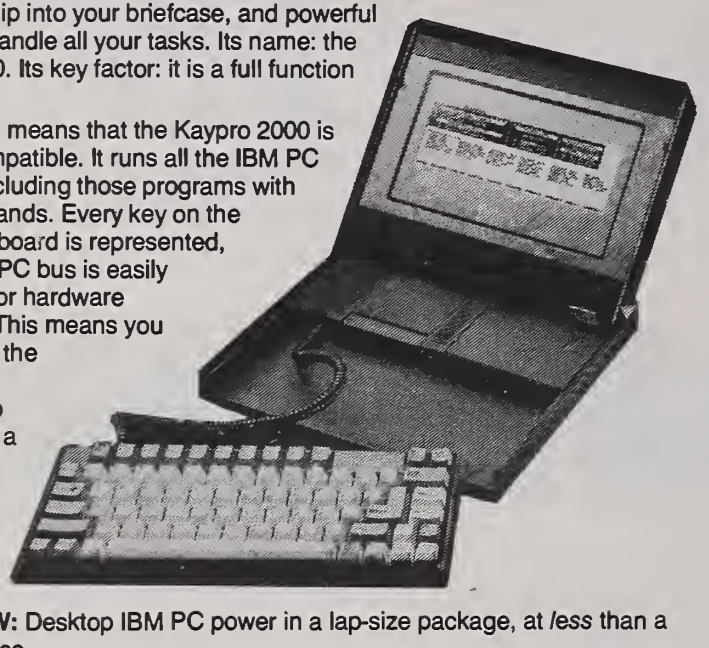

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Community Entrepreneurs Organization (CEO) Business networking group meets around SF area. Invests in new products, markets, brainstorms. Share info. on tech and non-tech business issues. 4 meeting locations, various week nights. Contact Dr. Crandall, P.O. Box 2781, San Rafael, CA 94912. (415) 435-4461.

Computer Professionals For Social Responsibility P.O. Box 717, Palo Alto, CA 94301. (415) 322-3778.

Computer Professionals For Social Responsibility (EAST BAY) 902 Rose Ave., Piedmont, CA 94611. Contact Bruce Joffe, (415) 768-0288 days, (415) 654-5263 eves.

FOCUS-MED (Federation of Computer Users in Medicine). Open to all physicians and health professionals. Practice management consultant registry. (415) 626-4600.

FOCUS-DDS (Federation of Computer Users in Dentistry). Open to all dentists and dental professionals. Practice management consultant registry. (415) 626-4600.

ITRA Independent Technical Representative Association is an organization dedicated to helping people better understand the Personal Computer (IBM). Contact Tim Jones, 870 Market St. #609, San Francisco, CA 94102, (415) 421-4872 for meeting time and date.

MCTUG (formerly Marin County TRS-80 Users' Group). MS-DOS, CP/M and Tandy users group. Meets 7:30 pm on the first Monday of the month at the Larkspur Masonic Lodge, 1122 Magnolia Ave., Larkspur. Contact Dr. Frank Hovell, 907 Sprucewood Court, Petaluma, CA 94952, (707) 762-5740.

NEW METHODS. Listings of Animal and Veterinary groups; book publishers; associations — all fields, manufacturers and related; animal professionals; others available upon request. Contact Ronald S. Lippert, AHT, P.O. Box 22605, San Francisco, CA 94122, (415) 664-3469.

NCR BBS of Northern California Bulletin Board System for all users of NCR Microcomputers (Decision Mate V and PC-4). Learn more about NCR's microcomputers.

PRACSA (Public Remote Access Computer Standards Association) offers to clubs, schools, and user groups a Speakers Bureau. The purpose of the bureau is to act as a resource to these groups in obtaining speakers of high quality for their meetings. The volunteer speaker is provided free to the group. Contact (408) 262-5150. Meetings 4th Wednesday, 7 pm, Vadic Cafeteria, 222 Caspian Dr., Sunnyvale.

San Bruno Computer Club. Meetings Wednesday 7:30 pm. Call Pete Testart, (415) 952-9309 for information.

San Francisco Computer Society (Formerly the San Francisco First Osborne Group). A society for users of portable computers and/or the CP/M operating system. P.O. Box 783, San Francisco, CA 94101-0783. Meetings on fourth Thursday of the month, St. Aidan's Church, Diamond Heights and Goldmine Dr. in SF. All are invited. Dues $10/yr.

SOUTHERN CALIF

Computer Professionals for Social Responsibility. The LA chapter is interested in computer reliability and preventing nuclear war, the socially useful direction of computer research, and similar topics. They meet the third Monday at 7:30 pm at the Nuclear Information Center, 1431 Ocean Ave., Suite B, Santa Monica. Phone (213) 747-3219 for more information.

Organization of Professionals, Educators, and Novices (OPEN). Tutorials, random access period, feature presentation, public domain library, and CP/M literature are all part of the monthly meetings of Osborne owners/users and MS-DOS transportables. Club BBS and newsletter. Call Frank L. Christ at (213) 498-4186 for more information. Meetings at Learning Assistance Center, CSU Long Beach, 3rd Wednesdays, 7 pm.

The North Orange County Computer Club This group is the largest and perhaps the oldest in the county. It is affiliated with a large number of special interest groups and offers something for just about every user. General meetings are usually the first Sunday of every month in the Hashinger Auditorium, Chapman College, Orange. For info, call (714) 998-8080.

The South Orange County Computer Club A general computer club that meets the first Tuesday of every month at 3545 Harbor Blvd., Costa Mesa. Meetings begin at 7:00 P.M.

USER GROUPS

NATIONAL/INT'L.

TPUG
World's largest Commodore Users Group. $25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon — Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modem System, 24 hours, 7 days. TPUG Inc., 1912A Avenue Rd., Suite 1, Toronto, Canada M5M4A1.

Apple Co-op 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

JUG (Jefferson State Computer Users Group). Many SIGs, newsletter. Dues $5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

MicroPro Users Group of America. National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hardware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

Franklin Users Group. East Wind Road, Apt. L, Tecumseh, MO 65760. Send SASE for info. Newsletter, BBS in the works.

NORTHERN CALIF.

ACTRIX

ACTRIX Computer Enthusiast Society. Membership ($20/yr) provides public domain software, group rates, discounts for owners of Actrix/Access Matrix microcomputers. Meetings at Sunnyvale Community Center, last Wednesday of the month, 7 pm. Contact K. Edward Lynch, 1405 Phelps Ave. #29, San Jose 95117, (408) 756-5104, for more information.

ADAM

California's Adam Users' Group. For a sample issue of the newsletter and a hardware-software catalog free, send your address to CAUG, 1643 Beach St., San Francisco, CA 94123.

APPLE

San Francisco Apple Core Meets every third Saturday of the month at Fort Mason, Bldg. C, Room 100 at 10 am. New products and innovations are featured for Apple II, Apple III, Macintosh and Lisa. Public domain library, SIGs, tech help, newsletter. $20 per year membership. Info: SF Apple Core, 1515 Sloat Blvd., Suite 2, San Francisco, CA 94132. (415) 566-2342 (voice), (415) 474-8608 (BBS/modem).

SPCA (Society For The Prevention of Cruelty To Apples) The Society for the Prevention of Cruelty to Apples is a club for owners of Apple, Apple compatible (Franklin, etc.) and Macintosh personal computers. It meets at 7:30 pm on the last Wednesday of the month at Thornton Jr. High School, on Thornton Ave. at Dusterberry in Fremont. Contact SPCA Publicity Chairman Milton Buck, 5246 Channel Drive, Newark, or call (415) 794-2823 for more info.

Association of Apple 32 Users Macintosh, Lisa. An association of "knowledge workers" who wish to share information on products, applications, and events. User-developed, non-copyrighted software, SIGS, newsletter. P.O. Box 634, Santa Clara, CA 95052.

Apple Eaters Users Group Apple II users group meets monthly (first Thursday) at Hayward Software Centre. Operates, with San Leandro H.S., a 24 hr. free BBS at (415) 577-3409. Meetings 22406 Foothill Blvd., Hayward. Contact Bob Shayler, 2200 Bancroft Ave., San Leandro, CA 94577, for more information.

Pen Apple. Pen Apple Users Group meets 2nd Thursday of each month at AMPEX cafeteria, 7:30 pm, Redwood City. Draco Bulletin Board. Contact Karl Shores (415) 366-0339.

Diablo Valley Apple Users. Meets 3rd Friday of each month at EMS, 2371 Stanwell Dr., Concord, at 7 pm. Contact Lynn Hart, P.O. Box 5031, Concord, CA 94524, (415) 798-9281.

USER GROUP NETWORK

NORTHERN CALIF.

ASHTON-TATE

Framework/Editor Bay Area Users Group (FREDBUG) Purpose of the group is to share programming and applications techniques under FRAMEWORK for the business and technical professional. Call for info: Rudi Wiedemann, (408) 730-4159.

San Francisco dBase User Group For advanced users and programmers. Meets once per month. Membership required for attendance. Contact Frank A. De Coster, 1100 Gough St., San Francisco, CA 94109, (415) 474-6693.

dBase Users Group. Meets 2nd Tuesday each month at Software Center, 1975 Diamond Blvd. #C220, Concord (Willows Shopping Center), 7:30-9 pm. Contact Cyndy Kolnick (415) 235-7317 for information.

ATARI

ABACUS (Atari Bay Area Computer Users Society) All ATARI users or prospective users are welcome. Membership ($15/year) provides public domain software, low cost blank disks, monthly newsletter, group prices on hardware and software, help from experts, low cost classes for beginners. Meetings first Saturday of the month, Fort Mason, SF, Room 300, Bldg. C, 10 am-2 pm. Contact Bill Zinn, P.O. Box 1823, Mill Valley, CA 94941. (415) 753-8483.

A.C.M.E. (Atari Computer — Marin Enthusiasts) Meets monthly in Marin, third Thursday evening monthly from 7 pm on. Gallinas School, 177 N. San Pedro Rd., San Rafael. Contact Bruce Frank, (415) 435-6020, P.O. Box 222, Tiburon, CA 94920.

Diablo Valley Atari Computer Enthusiasts (D.A.C.E.) Contact Richard C. Foster, Secretary, 3760 Lindero Drive, Concord, CA 94519.

Bay Area Atari Users Group We have a 24-hour BBS at (408) 578-2390. Meetings at Dysan Auditorium, 4201 Patrick Henry Drive, Santa Clara, CA 95050, first Monday of the month. Contact Frank Nagle, P.O. Box 50459, Palo Alto, CA 94303, (415) 940-1323 for more info.

San Leandro Computer Club Although open to all computer users, this group is primarily oriented to Atari computer owners. Our club is considered one of the best in the country, worthy of consideration by both novices and experts. Meetings 1st Tuesday of the month at San Leandro Community Library, 300 Estudillo Ave., San Leandro, CA. Contact Phil Mitchell, P.O. Box 1525, San Leandro, CA 94577-0152 for more info, or call (415) 351-2208.

ATTACHE

Attache UNL Otrona may be dead, but the Attache Users News Letter Lives ON!! Contact Jim Ayers, 301 Poplar St., Mill Valley, CA 94941. (415) 388-4805. Meetings 7:30 pm, 2nd Wednesday.

BASIS

Bay BUG Basis 108 Users meet every first Friday of the month at College of Alameda Computer Room, 7:30 pm. Contact Roger Bernhardt, 536 Mission, San Francisco or call (415) 221-0262 for more information.

COMMODORE

San Francisco Commodore Users Group Public domain library, classes, tech help, in depth demonstrations, monthly newsletters, Epromer, savings on purchases, all this and more. BBS # (415) 567-5046 300 baud. Meeting address 256 Laguna Honda Blvd., San Francisco, 3rd Tuesday of the month, 7:30 pm. Contact Roger Tierce, 278 27th Ave. # 102, SF, CA 94121, (415) 387-0225.

20/64 Computer Users Group — San Jose Meets first Sunday of the month at the Theatre Building, San Jose City College, from 6 to 9 pm. (Donations requested to help defray cost of renting meeting space.) Call Herb Miller, (408) 253-2064 for more info, or write P.O. Box 18473, San Jose 95158.

20/64 Computer Users Group — San Jose North Valley Meets second Saturday of the month at the second floor Community Room of Montgomery Ward's, Capitol and McKee Roads, San Jose, from 10 am to noon. (408) 253-2064.

20/64 Club The Cupertino chapter of the 20/64 club for Commodore users meets the second Sunday of each month, Cupertino Public Library, 6 pm. Contact Rex Ackerman, P.O. Box 61063, Sunnyvale, CA 94086. Phone (408) 245-7270.

20/64 Computer Users Group — Campbell Meets the fourth Tuesday of the month at the Campbell Public Library, 70 North Central Avenue, Campbell, from 6:30 to 9:30 pm. (408) 253-2064.

20/64 Computer Users Group — Gilroy Meets the second Wednesday of the month at the Gilroy Public Library, 7397 Rosana Street, Gilroy, from 7 to 9 pm. (408) 253-2064.

Diablo Valley Commodore Users Group Meetings Contra Costa Water District Auditorium, 1331 Concord Ave., Concord, CA, second Thursday of month at 7:30 pm. Write DVCUG, P.O. Box 27155, Concord, CA 94527, or call (415) 838-2838 for more info.

Napa Valley Commodore Computer Club Meets first and third Mondays, 7:30 pm, at Northwood Elementary School, 2214 Berk St., Napa. Take Redwood Road to Dover St. to Berk St. Contact President Dick Bull (707) 257-3773 or vice-president Roger Pruym (707) 253-1690 for more info.

Lake County Commodore Users Group Contact Al Reuss, P.O. Box 388, Clearlake, CA 95422.

Marin Commodore Club Meets at Redwood High School, Corte Madera. Visitors welcome. Contact Elmer Johnson for information: 665 Las Colindas, San Rafael, (415) 479-0426.

PUG of the Silicon Valley Commodore 64 (PETs, 8032s, 2001s also). Friendly computer group established back in 1977 with a very extensive disk library. No dues, donations only. Bring your machines to the meeting or use club dual disk drive to copy programs. Meets at cafeteria, Ford Aerospace Bldg. #3, 3939 Fabian Way, Palo Alto, CA 94303, 1st Wednesdays of the month, 7-10 pm. Contact Marvin Vander Kooi, (408) 446-1936.

Peninsula Commodore User Group Public domain library, demonstrations, user help, newsletter. Membership is $25 per year. Non-members pay $2 at door. Meetings are 3rd Tuesday of each month. Meeting place is the Church of the Good Shepherd Hall, 1300 5th Ave., Belmont (across from city hall). For more info call (415) 595-5452 between 9 am and 6 pm, or call our BBS at the same number after 6 pm.

The Commodore Connection. Newsletter, BBS, public domain disks, dealer support and more. Approved member of Commodore World. Call (415) 458-3318 8 am - 8 pm or 8 pm - 8 am for the BBS. Meetings 1st and 3rd Mondays, Neighborhood Center, Civic Ave., Pittsburg, CA, 7:30 pm.

Commodore User's Group of Hayward. The CUG of Hayward meets the first Saturday of each month from 3 to 54 pm at the Commodore Computer Center located at 22521 2nd St., Hayward. Call (415) 886-1916 evenings between 5 - 8 pm or (415) 537-1323 days between 10 am and 5 pm.

COMPAQ

SF Compaq. A Compaq user's group is being forming in the SF Bay Area. Contact David J. Blow, 439 Hoffman Ave., SF, CA 94114, (415) 221-2768.

CROMEMCO

Silicon Valley Cromemco Users Meets 4th Tuesday of the month at MCM Enterprises. 215 Hamilton Avenue, Palo Alto, CA. Call Ken Brown at (415) 327-8080 for details.

EAGLE

Eagle Computer Users Group (ECUG) Forum for exchange of info and ideas relating to Eagle Computers. Meetings and classes in WP, Data Base, Modems, CP/M, MS/DOS, etc. Meetings at Mercury Savings and Loan, 859 Blossom Hill Road, San Jose, fourth Monday of the month, 7 - 9 pm. Contact David Meisman, P.O. Box 8431, San Jose, CA 95155, (408) 973-1254/973-1460.

Screaming Eagles user group is for Eagle II (8-bit) machines and programs. Public domain disks, newsletter (quarterly, $5), hardware and software discounts, tech help and SIGs. CompuServe PCS-54 anytime; contact Leslie Lieurance, 101 Parnassus #1, San Francisco, CA 94117 (415) 661-4362 (voice).

ENABLE

ENABLE Users Group Now forming. Contact Lion Goodman, 38 Glen Dr., Mill Valley, CA 94941. (415) 383-2337.

EPSON

Bay Area Epson Salts — Epson 125 Del Centro, Millbrae, CA 94030, (415) 697-0567.

Epson Users of San Francisco Bay Area Epson group has nationally circulated newsletter *Valnews*: 400 members — mostly QX-10 owners, growing software library. Meetings focus on mutual support. Mainly Valdocs and other applications. Meetings first Thursdays. 7 p.m. Fort Mason Center, Bldg. C, Room 205, San Francisco. Contact Alan Magary, 904 Irving St., Suite 271, San Francisco CA 94122, (415) 661-9270.

Napa Valley Epson Users Group 1307 Hestia Way, Napa, CA 94558, (707) 253-8727.

FORTH

FORTH Interest Group, Berkeley Chapter. Meets 2nd Saturday of the month at 1 pm, 10 Evans Hall, UC Berkeley. Contact Mike Perry, (415) 644-3421.

FORTH Interest Group, Monterey/Salinas Chapter. Contact Bud Devins, (408) 633-3253.

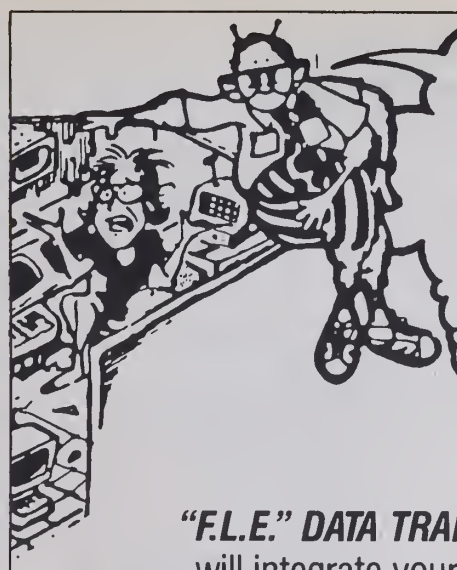
FORTH Interest Group, Sacramento Chapter. Meets 2nd Tuesday of the month, 7 pm, 170B 59th St., Room C. Contact Tom Ghormley (916) 444-7775.

FORTH Interest Group, Bay Area Chapter. Meets 4th Saturday of the month, 10 am advanced, 1 pm beginning, at ABC Christian School Auditorium, Dartmouth and San Carlos Ave., San Carlos (408) 277-0668.

FORTH Interest Group, Stockton chapter. Contact Doug Dillon (209) 931-2448.

GAVILAN

Gavilan Users Group. BBS (408) 978-DATA 300/1200. Meeting 2nd Thursday 7:30 pm, 10250 De Anza Blvd., Cupertino. Info call Bob Brown (408) 379-2774.



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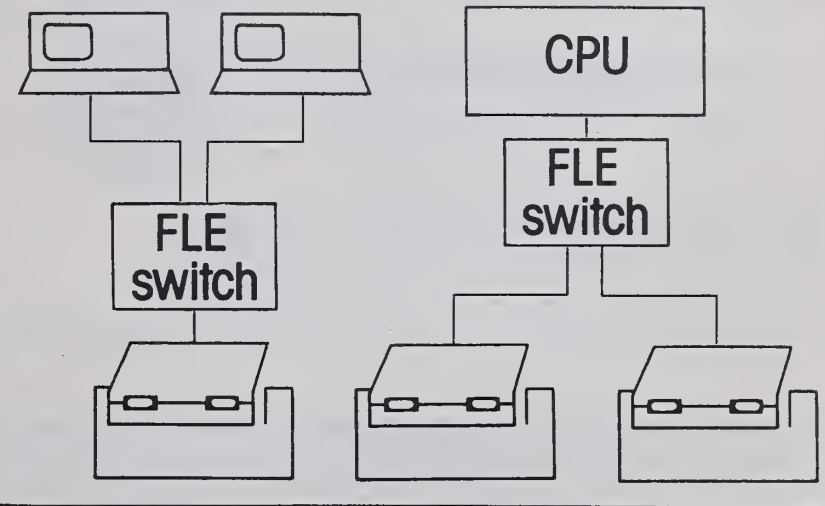

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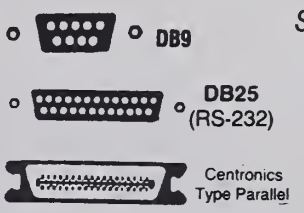

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USER GROUP NETWORK

NORTHERN CALIF.

HEATHKIT

San Jose Heathkit Users Group. Meets first Wednesday at 7 pm at the Heathkit store on South Bascom Ave. in Campbell.

IBM

San Francisco PC Users Group Largest SF group focusing on IBM and compatibles. Over 150 disks of public domain software, excellent monthly newsletter. 800+ members, $25/year. Please contact Rick Alber, 3853 18th St., SF 94114. (415) 864-5141.

South County PC Users Group Meetings held second Thursday of each month, at Software Center, 22406 Foothill Blvd., Hayward, CA. Public Domain club disks, newsletter and help on MS-DOS problems. Contact Debra Taylor, P.O. Box 7656, Fremont CA 94537-7656 for more info, or call (415) 276-5111.

Sacramento IBM-PC Users Group. P.O. Box 685, Citrus Heights, CA 95610. Contact George W. Lefler (916) 988-2274.

SVCS (Silicon Valley Computer Society). IBM users group. Meets second Wednesday at 7 pm at the Westinghouse auditorium located on the corner of Duane and Britton Aves., in Sunnyvale.

KAYPRO

Santa Rosa KUG Owners of Kaypro computers or CP/M systems are invited to join the SRKUG. We conduct seminars and software instruction/training. Come join the fun. Meetings 3rd Thursdays of the month at 7 pm. Call for meeting address: James Daniels, 1029 Damon Court, Santa Rosa, CA 95401. (707) 575-8149.

BAKUP (Bay Area Kaypro Users and Programmers). One of largest Kaypro user groups in country. Meets 3rd Tuesday of month, 7:30 pm. We support our RBBS/RCPM for members, publish a monthly newsletter, have a 40 volume software library, and a lot of fellow KP'ers! Write for info, $10 per year to join: Membership Coordinator, P.O. Box 20181, Oakland, CA 94620.

KAYFUN Peninsula Kaypro Users Group meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., San Carlos. Bimonthly newsletter, public domain software library, and publication library. Membership $12 per year. Every third meeting a Free Forum night dedicated to individual help. Contact Larry Welling, 222 Laurel St. #310, San Carlos, CA 94070, (415) 593-9981.

South Bay Kaypro Users Group (SBKUG). Meetings at 10400 Torre Ave., Cupertino. We have an extensive library of public domain software, including over 200 diskettes of the SIG/M library. The floor is open for questions at each meeting, and we welcome new members at all levels of ability. Bring your machine, or at least your diskettes. For meeting night call Chuck Hansen at (408) 257-5244, or write P.O. Box 390088, Mountain View, CA 94039-0088.

MACINTOSH

EBMUG (East Bay Macintosh User's Group) Friendly, informal. Public domain software and computer book library. Information exchange. Speakers. Product discounts. Free admission. Meets at El Cerrito Public Library, 6510 Stockton. El Cerrito, CA, third Tuesday of each month at 7:30 pm. Contact Shep Tamler, 5901 Broadway # 7, Oakland, CA 94618. (415) 653-5849.

Bay Area MacForum New and experienced Macintosh users. 2 monthly meetings: one immediately following San Francisco Apple Core meeting at Fort Mason, Building C, Room 300, San Francisco, 3rd Saturday of the month; one at Software Center, The Willows Shopping Center in Concord, second Monday of the month, 7 pm - 9 pm. For info: 1515 Sloat Blvd. # 2, San Francisco, CA 94132, (415) 566-2342

Berkeley Macintosh Users Group meets every Thursday evening at 5:30 pm on the UC Berkeley campus, in Physical Sciences Lecture Hall (near East Gate). Speakers, discussions, questions and answers. Developer SIG meets every other Wednesday at 5:30 pm on UCB campus in Dwinelle Hall lobby. For more info contact Reese Jones, Director, 1442A Walnut St., Suite #153, Berkeley, CA 94709 or call (415) 849-9114.

MacNexus. Sacramento's Macintosh User Group. 150 members, but still informal. Extensive public domain collection. Contact Gail McGovern, P.O. Box 60908, Sacramento, CA 95860, (916) 446-2411. Meetings 3rd Thursdays, 6:30 pm, Almond Plaza, 17th & C, Sacramento.

MacProgram Unlimited. Meets monthly. Informal with hands-on testing of different programs. Public domain and standard programs in rental library. Meets Albany YWCA, Kains and Solano, Saturday 9:30 am. Contact William Gong, P.O. Box 7704, Berkeley, CA 94707. (415) 527-1756.

MICRO DECISION

BAMDUA (Bay Area Micro Decision Users Association). Meets on last Tuesday of the month, 7:30 pm. Call (415) 644-2805 for location. Monthly newsletter.

MINDSET

First Mindset Users Group The only users group for Mindset computer owners and users. Monthly meetings cover advanced microcomputer graphics and more. Meeting at Graphic Reproduction, 181 Mission Street, SF, March 18. Call David Duberman (415) 668-8352 for more info, or write him at 355 15th Avenue #5, San Francisco.

NORTHSTAR

INSUA Largest North Star users group in the world. Members' newsletter and software library. Membership dues $20. Contact George Riddle, P.O. Box 2910, Fairfield, CA 94533.

OSBORNE

East Bay FOG (First Osborne Group) Osborne, Kaypro and Morrow. Meets second Wednesday of the month at B&B Electric, 2832 Ford Street, Oakland. 6 pm workshops, 7:30 pm program. For info contact 5497 Taft Ave., Oakland, CA 94518; phone (415) 272-9099.

SMOG3 Osborne User Group (Peninsula) Meets first and second Monday of every month at Crane Place, 1331 Crane, Menlo Park. Call Phil Moore at (415) 325-2442.

MTDOG (Mt. Diablo Chapter—First Osborne Group) Meetings 7 pm, 3rd Wednesday each month in Diablo Room (top floor), SF Federal Savings and Loan, 1660 Olympic Blvd. (cross-street: California), Walnut Creek. Software library, software/hardware/service demonstrations, sharing problems and solutions. For meeting info contact Sylvia Tobias, (415) 376-4720.

PICONET

Piconet CP/M Users Group. Meets second Thursday at 7 pm at the Stanford Linear Accelerator Auditorium, Palo Alto. The password at the gate is "Piconet Meeting."

PIED PIPER

Pied Piper Users Group Owners of Pied Piper CP/M based computer are invited to call or attend the PPUG. Meets last Tuesday of the month at 7:30 pm. Please call (415) 638-1146. Meeting address: 10950 Elvessa St., Oakland 94605.

R2E

North Bay R2E Forming user group for R2E System microcomputer users. Please call (415) 235-1598 for information.

RADIO SHACK/TRS

Byte Bandits of America TRS-80's workshop computers club — bimonthly meetings — 2nd Saturday and 4th Wednesday of the month. Bring your computers. Free membership. Modem (408) 374-3974. Meetings at 780 Many Ave., Campbell, CA. For info contact R.W. Brown, (408) 379-2774.

TRS-80 Computer Society of Diablo Valley The purpose of this group is the sharing of information, problem solving, support group, purchasing discounts, support for professional, business and educational users of Radio Shack computers. Out-of-area members welcome. Meetings second Tuesdays of the month, Willow Creek Center, 1026 Mohr Lane, Concord, 7:30-9:30 pm. Doors open at 7. Contact Roy or Sue Copeland, P.O. Box 23438, Pleasant Hill, CA 94523, (415) 372-7003.

MCTUG (Marin County TRS-80 Users Group). Meets once a month on the second Monday. Meetings start promptly at 7:30 pm in the Larkspur Masonic Lodge, 1122 Magnolia Avenue, Larkspur. For information contact Frank Hovell (707) 762-5740 or Lois Johnstad (415) 453-5412.

SAMNA Word

SAMNA Word III San Francisco or East Bay telephone network forming to discuss glitches, ideas, and interface hassles. Contact Shanti Pederson, (415) 982-8898.

SANYO

Sanyo 1100/1200 User Group of the San Francisco Bay Area. P.O. Box 297, San Mateo, 8-10 pm, every 2nd Friday of month. Send large self-addressed stamped envelope for copy of newsletter.

Sanyo MBC 1100-1150 user group now forming in Oakland. Call or write (415) 534-1981, 5885 Bancroft Ave., Oakland 94605 for meeting time and location.

Sanyo User Group of the San Francisco Bay Area meets 2nd Friday of the month at Sears Savings Bank, 1820 S. Grant, San Mateo, 8 - 10 pm. Devoted to Sanyo 8-bit CP/M machines: MBC 1000, 1100, 1200 series. For info write 1260 Westwood St., Redwood City, CA 94061.

Sanyo. Bay Area Chapter of the Sanyo National User's Group is now forming for support of Sanyo MBC-55X Series. Call now and participate in the forming of this new user-oriented support group. (415) 582-1667 or (415) 345-7781.

Santa Clara Sanyo Users Group. SCSUG's 24 hour BBS (415) 659-9169. Support for MBC-55X Systems. Meetings at 1 West Campbell Ave. #80, Campbell, 7-10 pm every 3rd Wednesday of the month. Contact Jim Thomas, (415) 651-0201 for info.

TEXAS INSTRUMENTS

San Francisco 99ers One General Meeting per month plus uncountable mini-meetings for training. Over 500 programs available in library. Meetings second Tuesday of the month, 6:30 pm. Texas Instruments Learning Center, SF. Contact Dick Altman, 1053 Shrader St., San Francisco. (415) 661-1994.

USER GROUP NETWORK

NORTHERN CALIF.

South Bay T.I. User Group. One general meeting per month. We have training session, library and own bulletin board (408) 578-6264. Meets first Thursday of each month at 7:00 pm, 1368 N. 4th St., San Jose. Contact Fred Roettger, v.p., for info: (408) 253-3510.

Nor-Cal TI 99/4A Users Group. Learn more about your Texas Instruments 99/4A computer. Free software, sources ofr hardware and software. Contact Dave Strady, 324 Howard St., Petaluma 94952, (707) 762-6561. Meetings at Retail Clerks' Union Hall, 382 Tesconi Ct., Santa Rosa, CA, first Wednesday of the month at 7 pm.

TIMEX/SINCLAIR

East Bay Timex/Sinclair User Group (EBZUG) Timex/Sinclair user group. S/W library and newsletter. Meets at West Branch of Berkeley Public Library at corner of University and San Pablo. Meets 3rd Tuesday of the month at 7:30 pm. Contact Rick Link. 654 40th St., Richmond, CA 94805. (415) 234-3310.

Peninsula Timex/Sinclair User Group (PUG) Timex/Sinclair user group. S/W library and newsletter. Meets at Peninsula Hospital, 1783 El Camino, Burlingame. Meets 3rd Sunday of the month at 1 pm. Contact George Mockridge, 263 Gateway #107, Pacifica, CA 94044. (415) 359-3198.

Silicon Valley Timex/Sinclair User Group (SVTSUG) Timex/Sinclair user group. S/W library and newsletter. Meets at Dysan Corp., 5201 Patrick Henry Drive, Santa Clara. Meets last Tuesday of the month at 7 pm. Contact Rita Carr, P.O. Box 4133, Santa Clara, CA 94044-0133. (408) 738-2888 ext. 45.

UNIX

The Unix C-Club Seminars, public domain softwares, information exchange, Unix hardwares and softwares. Discount on purchases. Meets 2nd Saturday of each month at 10 am. Call Gilbert B. Dalit at (415) 348-6723 or (408) 238-5587 for more information, or write: 122 2nd Ave., Suite 214, San Mateo, CA 94401.

VECTOR

Bay Area Vector Group Meeting held regularly. Please call to be put on mailing list. You will be informed of next meeting! Contact Peter Tjeerdsma, 764 Cole St. #4, San Francisco, CA 94117. Phone (415) 681-0308.

VICTOR

Victor* Group is the San Francisco Bay Area Victor User's Group. We have three chapters — East Bay, South Bay, and San Francisco. Members can attend meetings at any of the chapters or all of them. The more the merrier. Dues are $30 a year, which includes a subscription to VictorTalk, membership in a Victor-exclusive discount buying cooperative, and the right to buy from our public domain library at a discount. South Bay meetings are held the first Thursday of each month at computer Insights, 40957 Grimmer Blvd., Fremont at 7:30 pm. Contact John Kimber (415) 797-6423. East Bay meetings are held the second Wednesday of the month at 7:30 pm; contact Boardman Moore (415) 283-3285 for location and further info. San Francisco meetings are held the third Sunday of the month at 5 pm at Homestead Savings, 130 West Portal, San Francisco. Contact Joe Zmuda, (415) 584-4048.

San Francisco Victor* Group The San Francisco Victor* Group meets at 4 pm the third Sunday of each month at La Bettola di Adolph Restaurant, corner of Broadway and Montgomery. Come early for public domain copying. Contact Darrell Bross, 254 Winding Way, San Francisco, CA 94112, (415) 586-5788.

SOUTHERN CALIF.

ADAM

Adam Users of Southern California. Come and keep the ADAM going. We have access to some of the people who developed software for ADAM and we are going to create a base for tips, reviews, and a BBS. Get on line with ADAM. Meetings at Airport College Center, Sepulveda and Century, 4th Sunday, noon. Contact Harvey Klein, 1736 S. Bedford, LA, (213) 553-1062 or Paul Shecter, 5545 Lindley, Tarzana.

ALTOS

Altos User group forming in West LA area. Contact Margaret Beemer, History Department, UCLA, Los Angeles, CA 90024.

APPLE

The Orange Apple Group All Apple owners are invited. Members are knowledgeable on many usages of all types of Apple machines. Meetings are on the first Saturday of every month from 9:00 to 12:00 a.m. For info, call (714) 897-8943.

South Bay Apple III User Group The Apple III is alive and well in Southern California. Come join us on the IIIrd Tuesday of each month. Product demos and discussions and more. Meeting address 1000 Victoria Avenue, Room # SC-E157, Carson, 7:30 pm, IIIrd Tuesday. Contact Gary, P.O. Box 432, Redondo Beach, CA 90277, (213) 316-7738.

Pasadena Apple Users Group (PAUG) Meets at Century Federal Savings, 199 North Lake Avenue, Pasadena, CA (corner of Lake and Walnut). Enter from the parking lot side. Take the elevator to the basement. The bank unlocks the doors at about 7:15 pm and the meeting starts at 7:30. No dues, new members welcome.

Wabash Apple Users Group Product demos of software and peripherals, discussions, help from experts. Public domain library. Meets twice a month at the Burbank Public Library, 110 N. Glenoaks Blvd., Burbank. Some months there are *no* meetings, so call Marie Kaden for information: (818) 846-6682.

AT&T

AT&T 6300 West LA: AT&T 6300 or 8086 compatible (desk pro) group forming. Contact Miles Hillis, (213) 472-3522, leave name and interest.

ATARI

Atari Computer Association of Orange County (ACAOC). Join one of the biggest Atari user groups in Southern California. Monthly magazine, large public domain library, and BBS privileges for members. Dues $24.00/yr., $18.00 for non-attending out-of-town members. Meetings at Golden West College, Room 123, Huntington Beach, CA 92647, 4th Sunday of each month, 1-5 pm. BBS: (714) 731-6523.

West LA Atari Users Group. Come join fellow Atarians! Dues are $20.00/year. Newsletter, P/D library, ATR-Sig, discounts, guest speakers. Please call for directions to meeting room! If you're reading this, you belong with us. Meetings first Wednesday of the month, 7 pm, Paul Revere Jr. H.S., 1450 Allenford Dr., Brentwood. Call John Scheid, pres., for more information (213) 829-7239.

Los Angeles Atari Computer Enthusiasts (LAACE) meets 2nd Mon./mo. at 7:00 pm at Granada Hills High School, 10535 Zelzah Ave., Granada Hills, CA. Contact Bob Keimach, (818) 368-6243.

COMMODORE

Club 64 National user group. Monthly newsletter, BBS, group purchasing, public domain software, much more. Contact: Robert Johnson, (213) 925-4049.

San Diego Commodore Users Group Meets third Tuesday, 7-10 pm, at VFW Bldg., 19th and Broadway, San Diego. Contact Jane Campbell, (619) 277-7214 (between 5 and 9 pm) for more information, or write: P.O. Box 86531, San Diego, CA 92138-6531.

San Fernando Valley Commodore Users Group Meets second Wednesday of the month at Patrick Henry Junior High on Louise Ave. between Devonshire and San Jose in Granada Hills, near 118/405 freeway interchange. Contact Tom Lynch, 21208 Nashville, Chatsworth, CA 91311, (818) 709-4736.

San Luis Obispo Commodore Computer Club 1766 9th St., Los Osos, CA 93402. (805) 528-7475 BBS.

The Commodore Users Group - San Juan Capistrano This group of C64 users meets the second Saturday of every month from 9:00 am till 12:00 at Great American Federal Savings and Loan, 32232 Camino Capo, San Juan Capistrano. For info call 496-5745.

Orange County Commodore Technical User's Group C-TUG. Orange County's Commodore user group. Club newsletter, two 300/1200 baud BBSs, door prizes, SIGs in Comal, DOS protection, data bases, wpros, and BASIC. Custom software and ROM chips, and just plain good times. Meetings at Mercury Savings and Loan, 1095 Irvine Blvd., Tustin, CA 92680, fourth Sunday of the month, 11 am. Contact Tony Soto, P.O. Box 1497, Costa Mesa, CA 92628, (714) 953-0598.

Hollywood User Group (HUG) for Commodore 64. Meets at the Hollywood Equitable Bldg., 6253 Hollywood Blvd., Room 1219, Hollywood, CA (corner of Hollywood/Vine), at 12 noon. For further info write HUG, P.O. Box 38313, Hollywood, CA 90038; or call (213) 463-8973 (voice) or the HUG 1 BBS (213) 874-8253 24 hours a day.

EPSON

Cursor Club — Epson 402 W. Arrow Highway, Suite 6, San Dimas, CA 91773. (714) 559-8361, Bulletin Board: (714) 592-6316.

Foothill Epson User Group. We meet the fourth Tuesday of every month at Sparr Heights Community Bldg., 3311 Downing St., Glendale, CA, 7:30-9:30 pm. All are invited, speakers, questions, products, public domain disks, etc. Contact Gerald Jamriska, 2960 Hawkridge, La Crescenta, CA 91214, (818) 248-7133 for more info.

Epson Users Group of Orange County 6075 Jeffrey Mark Street, Cypress, CA 90630, (213) 414-4817.

Epson Users of San Diego P.O. Box 87448, San Diego, CA 92138, (619) 560-7604.

High Desert Epson Users Group 933 Cottonwood Drive, Barstow, CA 92311, (619) 256-3541.

PSC/QX 2934 Wilshire Blvd., Santa Monica, CA 90403, (213) 453-4535, Bulletin Board: (213) 474-4952.

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USER GROUP NETWORK

SOUTHERN CALIF.

South Bay Epson Users Group 1115 Cerise Avenue, Torrance, CA 90503, (213) 328-9916, Bulletin Board: (213) 618-1940.

Epson Computer Club of America. Monthly meeting 2nd Saturday of the month at 10 am, Mercury Savings and Loan, Irvine Blvd. one block east of Newport Ave. Messages Epson West Bulletin Board (714) 630-7104 User area B:15. Monthly newsletter "The Help Key." Contact Roy Boorman, 4021 Winterhaven St., Yorba Linda CA 92686, (714) 524-9483.

San Fernando Valley Epson User Group. TUG-NET SIG, monthly newsletter, BBS, group purchase, public software, classes. Meetings at Western Federal Savings, 14600 Roscoe, Van Nuys, 3rd Wednesday, 7 pm. Contact Tom Keyser, P.O. Box 1524, Reseda 91335, (818) 705-6300.

FORTH

FORTH Interest Group, Los Angeles Chapter. Meets 4th Saturday, 10 am, Hawthorne Public Library, 12700 S. Grevillea, Hawthorne. Contact Phil Wasson (213) 649-1428.

FORTH Interest Group, Orange County Chapter. Meets 1st and 4th Wednesdays, 7 pm. Call Noshir Jesung for info. (714) 842-3032.

FORTH Interest Group, San Diego Chapter. Meets weekly, Thurs., 12 noon, contact Guy Kelly (619) 268-3100 ext. 4784.

FUJITSU

Want User's Group Info Have Fujitsu Micro 16, am looking for a user's group or BBS. Contact Greg Lucido, 5199 E. Pacific Coast Highway, Long Beach, CA 90804.

HEWLETT-PACKARD

Club of Hewlett-Packard Hand-Held Users (CHHU). HP handheld users worldwide support CHHU as a noncommercial, open, independent club dedicated to applying today's machines and making a contribution to the true personal computer of tomorrow. Send SASE for more info to Richard J. Nelson, 2545 W. Camden Place, Santa Ana, CA 92704, or call (714) 754-7757 for meeting directions.

IBM

The North Orange County IBM PC Users Group These people are interested in helping any PC users. They meet the second Tuesday of each month at the Sunny Hills Racquet Club in Fullerton at 7:30.

The Greater South Bay IBM PC Users Association Any L.A. area PC or compatible owners are welcome to attend these meetings at the TRW cafeteria on Compton Blvd. Meeting time is 7:00 pm on the third Tuesday of each month. For info call (213) 325-7533.

The Claremont Computer Club This club is for any interested IBM PC users. Meeting starts at 7:30 on the third Monday at the Galileo Edwards Bldg. on the Harvey Mudd Campus. For info call (714) 626-2286.

Technical Users Group (TUG-NET). For CP/M & MS-DOS PC users. Meets on the first Monday of each month at 7:00 pm. Valley Plaza Park, Community Room, 12240 Archwood St., North Hollywood, CA. Contact Mike Faith - (818) 994-6567.

LISA

The Lisa Club of Los Angeles This is a brand new club just forming for Lisa owners. Meetings are scheduled to be the first Monday of each month. They have no permanent meeting place as of yet, but for information call (213) 852-4994.

MACINTOSH

Los Angeles Macintosh Group (LAMB) Membership fee is $25/yr or $15/yr for students. Membership includes 12 issues of MACDIGEST newsletter, access to public domain library, BBS, discounts at local stores. Meetings at Madison Elementary School, 11th and Arizona Ave., Santa Monica, 2nd Thursday of the month. Contact J. Baram, (213) 392-5697 for information.

MAC-Hollywood (Hollywood Macintosh SIG) meets once monthly on varying weeknights at 7:30 pm. Contact Ron Bastone, (213) 462-2860. Meetings at 1756 N, Garfield Pl., Hollywood, CA.

Ventura County Macintosh Club Mac and Lisa users invited. Membership $21/yr.; newsletter, software library, discussions and ideas. P.O. Box 7754, Oxnard, CA 93031, (805) 983-1610, (805) 499-2824.

NEC

Orange County NEC Users Group (OCNUG) Dedicated to NEC-APC computers, CP/M-86 & MS-DOS. Always room for any experience level. Meets 3 pm, third Saturday of the month. 6642 Lenore, Garden Grove. CA 92645. Call John Bingel at (714) 897-7656 for more info.

OSBORNE

Osborne National Users Group. Anyone interested in CP/M computer systems is welcome. Free admission. Speakers, questions and answers. Join our group for $10.00 yr. and copy public domain software from library. Meetings at 20630 Lassen St., Chatsworth, 2nd Friday of the month, 7:00 pm. Contact Alicia Fahey, P.O. Box 424, Northridge, CA 91328, or call (818) 709-6202 for more info.

Osborne Komputer Owners Klub (OKOK) meets 2nd Tues./mo. at 6:30 pm on the Cal-Tech campus in the Winnette Lounge Building on San Pasqual Street in Pasadena. Contact Lionel Sorraco, (818) 843-3440.

Osborne National Users Group meets 2nd Fri./mo. at 7:30 pm at Wizard of Oz, 20630 Lassen St., Chatsworth, CA 91311. Contact Art Schlefstein, (818) 709-6969.

RADIO SHACK/TRS

South Bay Color Computer Club TRS-80, TDP-100, Dragon. Meets third Friday of the month at Mercury Savings, 22939 Hawthorne Blvd., Torrance. Info: Andrew Corlett, 1435 W. 172nd St., Gardena, CA 90247. (213) 538-8394.

The Orange County TRS-80 Group This club is for all TRS users from beginning to expert. Meetings take place the third Sunday of every month at Chapman College, 1:30 pm. For info call 638-7889 after 7:00 pm.

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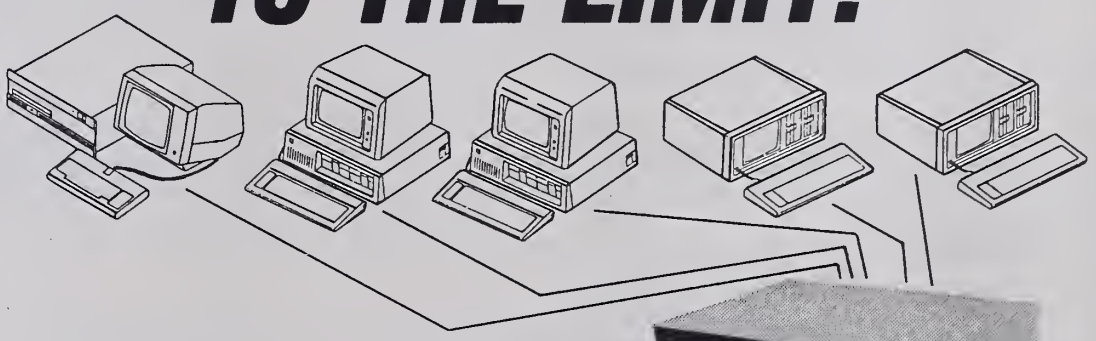

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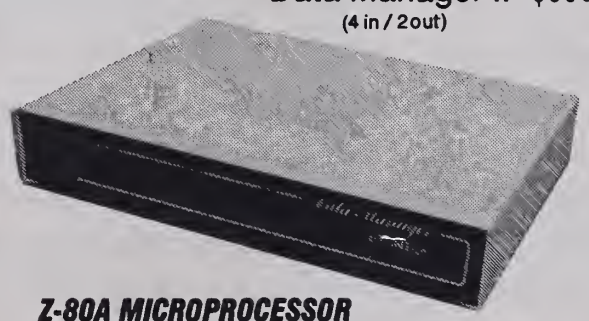

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South Bay Software

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Jack Johnson, who established South Bay Software at his home in Millbrae two years ago, wants it known that his operation is currently looking for dealers. "We would definitely welcome more dealers and retailers right now," Johnson says.

Actually, things have continually been looking up for South Bay Software over the last year. During that time, Johnson gained a partner in Marnie O'Connor, and has geared the business towards dealing strictly in Macintosh products. As Johnson puts it, "Originally, we had started out selling musical software for Radio Shack's TRS-80 computer until the market for it flattened out — then along came Macintosh."

On field-testing the Mouse Pad, Johnson says, "I drove my car over it several times and it came out okay. We even put them in the oven on high heat to see if they would melt."

South Bay Software's change of heart must have pleased Apple. Johnson says the makers of the Macintosh have assisted South Bay Software in getting a good line of credit and have also helped put the company's product line in with their dealers. "Business has also grown very steadily," says Johnson, "thanks to the increasing popularity of the Mouse Pad, which was featured last February at the *Macworld* Expo."

Johnson gives a slightly tongue-in-cheek description of the Mouse Pad: "It's designed to provide a clean working space for any Apple Mouse; it's great for armchair applications, as it allows you to lay-back and put it in your lap. It's also color coordinated with the Macintosh and it fits nicely into the computer's carrying case."

Johnson continues, "Another great feature about the Mouse Pad is that it will never have to be updated — it will always be the same for any Apple mouse. The pad is made up of closed-cell foam so it won't absorb liquids, and it is washable. All the other pads are made out of a fabric-type material, so they tend to wear out, whereas the Mouse Pad is extremely durable."

Johnson proved just how durable the Mouse Pads are by subjecting them to heat and impact tests. "I drove my car over it several times and it came out okay. We even put the pads in the oven on high heat to see if they would melt." He adds jokingly, "I'll tell you one thing—the pads sure don't taste very good."

In a more serious vein, Johnson states, "The Mouse Pad was well-received at the Macworld Expo, and has been critically acclaimed not only by various end-user groups but also by San Francisco's mayor, Dianne Feinstein. More important, though, is the fact that our retailers are selling out of them and re-purchasing more."

In addition to the Mouse Pad, South Bay Software features one other product, the Music Character Set. The software program could be described as a music word processor, strictly for writing sheet music and lyrics. The system's main purpose is to enable songwriters and musical directors to print out attractive sheet music without constantly having to re-write new sheets when making changes.

It comes as no surprise that South Bay Software offers this unique musical software package, since Johnson is a former musician himself. In the mid-'70s he played guitar and wrote songs for a Houston-based band called Nevasota, which released two albums. Johnson then moved to Los Angeles and worked with recording artists like Joe Cocker and the Pointer Sisters. His musical talents can be heard in the Bay Area on San Francisco's radio station KFOG during weekday mornings. Their "singing in the shower" program is preceded daily by Johnson's song, "KFOG On My Radio."

In 1978, Johnson went from penning songs to writing computer programs: "I wrote earthquake designs to help architects in the construction of hospitals and schools." This experience eventually led to writing his own designs for South Bay Software.

Currently, Johnson is working on two new graphic software packages which are similar to the Music Character Set but designed for engineers and architects. He hopes to unveil them by this summer.

As for any dealers that Johnson hopes to gain, he emphasizes, "We're competitively priced; the Mouse Pad goes for $12.95 and the Music Character Set is $24.95. Our soon-to-be-released packages will be priced at $19.95 and we offer a money-back guarantee. Plus, we service what we sell." What more could you ask for?

— *Tim Tyler*

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Compared to other computer product distributors, Cypress Distributing breaks away from the norm by providing their dealers with sell-through and profits. Says David Law, president of Cypress, "Most of the regional distributors, and the national ones to a lesser degree, supplement their dealers with all the expected things like technical support for hardware and software, wholesale seminars, and training sales people. Cypress does all of that too, but we really feel our job is to help our clients make money."

"Cypress does all the expected things — technical support, seminars, and training sales people — but we really feel our job is to help our clients make money."

Law explaines that providing sales and profits for their dealers is achieved through co-op advertising and promotions. "This, in turn, produces floor-traffic for our customers," he said. "Most regional distributors don't understand this concept. As a result, I feel Cypress is probably the best at supporting the retail store of any distributor in Northern California."

According to Law, Cypress runs about two to four promos a month, and the feedback they receive from their dealers is extremely positive. "We have customers that tell us they want to be in every one of our promotions," he says.

Apparently, their method of helping push products for the dealers has also had a beneficial effect on the company itself. Law points out, "Last year was Cypress' second year in business and we did 169 percent of our first year totals. We're a highly profitable company; our volume is in excess of six million dollars a year."

Law first had the idea to form Cypress around three years ago when he was working as a consultant for another distributing firm. "I could tell then that there was a definite need for a strong distributor that would help support the retailer," he said.

Although Law had no past experience distributing computer products, that didn't stop his foray into the market. "I had been marketing consumer products for twenty years, so all I did was take my knowledge about selling consumer merchandise and put it into the selling of computer products."

Cypress' long list of accounts, between 700 and 800, can attest that Law's transition from consumer to computer products has been relatively smooth. There are fourteen lines of products that Cypress carries consisting mainly of computer printers and microcomputers. They feature printers by Juki, Legend, Toshiba, Daisywriter, NEC, and Panasonic. Among their stock of microcomputers are Columbia Data, which is compatible with IBM software, and a line of Sanyo business systems.

Though Cypress does most of its distributing from its San Jose outlet, it also has a warehouse near Los Angeles at Canoga Park. "The place in Canoga is actually a sales office," says Law. "It doesn't have as many computer products to distribute as the San Jose warehouse does but it can receive shipments from them."

As successful as Cypress has been, Law does not expect the company to expand in the near future. He said, "I don't think 1985 is the year we're going to make a move because the market has been in a total state of flux. The way I look at it is that we've been doing quite well so far, so why risk anything?"

— *Tim Tyler*

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proficiency, there is no doubt that credit should be given to William Calfas, president of Text Sciences. He founded the company in 1979 and has been a member of the California Bar since 1958. His association with the legal profession has had an influence on Text Science's media conversion, electronic publishing, and DepoBank services. He explains, "Five years ago, I saw a significant problem —that whenever someone tried to change from one word and data processing system to another, they were confronted with all of this information. Surprisingly, this happened quite frequently, especially in the legal profession where court records are transferred from one division to another."

Text Sciences is the oldest and largest bureau in the western states to offer media conversion services. It's also the nation's leader in electronic publishing.

Shortly thereafter, Text Sciences was in business, and so was the development of its media conversion service. Calfas elaborates, "From our standpoint, we probably have the ability to connect from one system to another of one's choice. The media conversion enables the transfer of data between nearly 200 formats (which include systems by Apple, Wang, and IBM)."

In addition, single disks or entire libraries can be converted to or from these systems through media conversion. Although other alternatives to media conversion include re-keying or buying media conversion equipment, Calfas says that re-keying is expensive, as is purchasing media conversion equipment. "What we're doing, in effect, is saving businesses thousands of dollars through cost-efficient services."

In fact, the electronic publishing service is also economical because it eliminates hours upon hours of typing time. "Lawyers can quickly generate wills, real-estate, and other legal forms through our electronic publishing," Calfas says, again pointing out the impact that the legal profession has had on Text Science's developments.

Obviously, the DepoBank is no different, as lawyers, paralegals, and other litigation support personnel have found the information retrieval system beneficial. The DepoBank runs on the IBM PC, IBM-compatible, and other MS-DOS personal computers. It reduces costs by compacting over 1,000 pages of testimony on an ordinary (360 Kbyte) PC floppy disk, and over 25,000 pages on a (10 Mbyte) hard disk system. This format allows various DepoBank functions like key-word searching and reviewing testimony to be performed at an accelerated pace. Calfas says that DepoBank's compression ratio is about 3.5 to 1, or 1.2 million characters on an off-the shelf disk originally designed to hold a capacity of only 360,000 characters. Before DepoBank, the best compression ratio for consumers was only 1.8 to 1.

What is also unique about DepoBank is that its compact storage and extraordinary performance makes it the *only* full-text retrieval system that can conveniently access thousands of pages of testimony on ordinary personal computer systems.

Although Calfas says that Text Science's three major activities — manual conversion, electronic publishing, and DepoBank—have been significant to the company's substantial growth rate, he also points out that their first year in business was difficult in terms of selling their services. Calfas says, "We had just come out with the manual conversion service, and we're only one of two companies nationwide that offered it. You see, when you have a new product that is totally unique, people can become hesitant about buying it, since not many people know too much about it."

"What we're doing, in effect," says president William Calfas, "is saving businesses thousands of dollars through cost-efficient services."

Well, it seems that five years and some 20 billion characters later, Calfas can be content with his company's performance. Breaugh probably sums it up best by saying "We're ahead of our field in updating our format and developing new products. No one has the capabilities that Text Sciences has in terms of offering a wider range of products that deal with information processing—at least, no one that I know of."

— *Tim Tyler*

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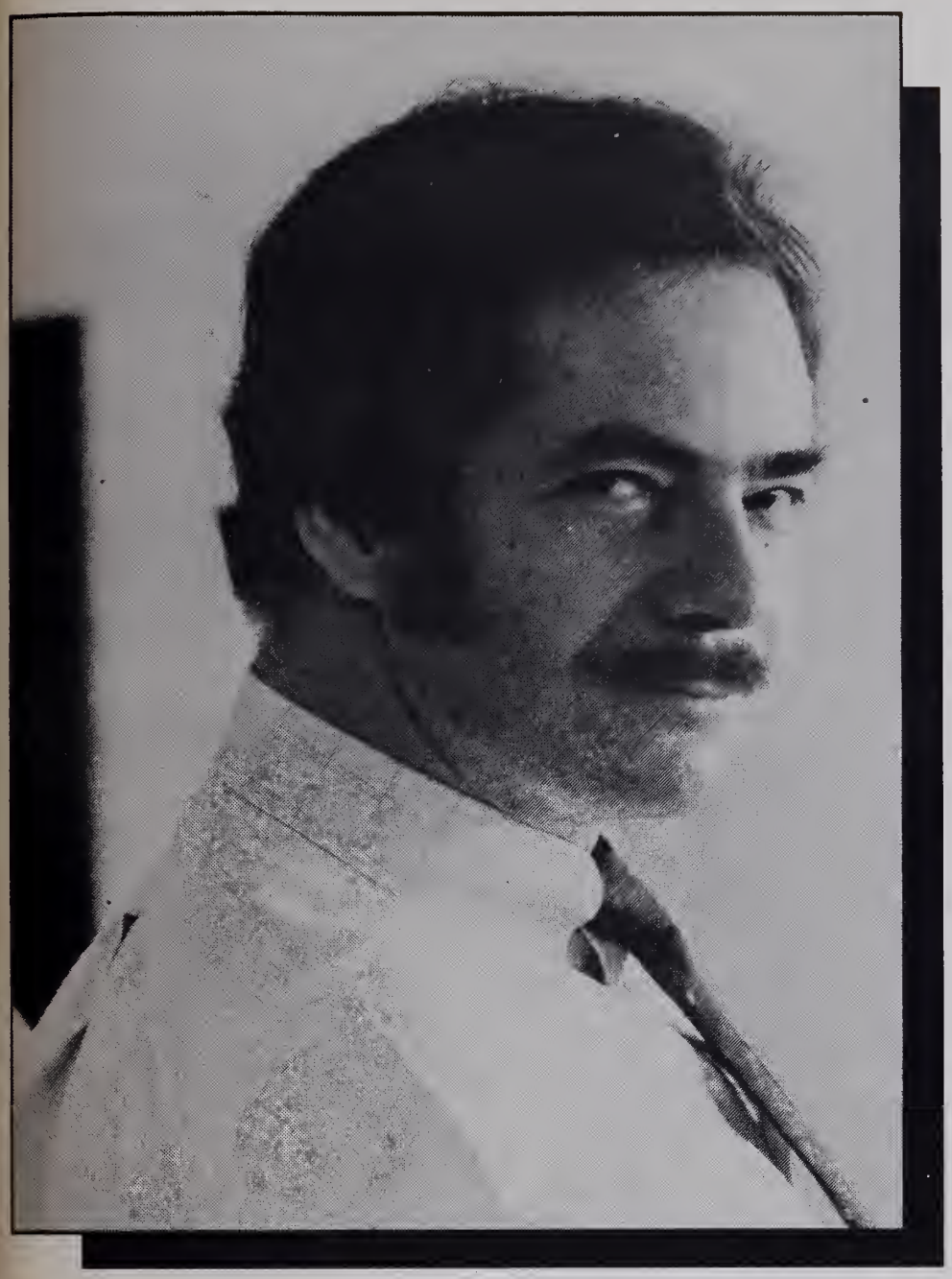

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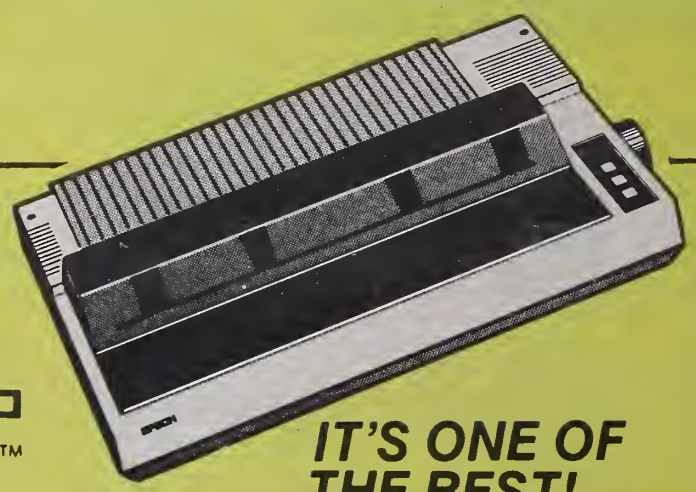

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